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THE PROBLEM OF THE CHRONICALLY ILL PATIENT

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The problem of caring for the chronically ill patient is intimately associated with the care of the aged and aging. Chronic invalidism in 80 per cent of the cases occurs after the age of 35, whereas it occurs in only 5 per cent before the age of 14. We are rapidly becoming a nation of elders. The aging of the population has far reaching significance not only medically but interlacing with all spheres of man's life and the social structure.

In 1900, 17 per cent of the total population of the United States were 45 years old or more. In 1940, 26.5 per cent exceeded 45 years of age. Conservative estimation by the U. S. Census Bureau, assuming that there will not be new immigration, predicts that in another forty years the structure of our population will be further changed. In a study made by the Committee on Economic Security, Social Security Board, it was determined that by 1970 more than one half of the people will be over 45 years of age and that each hundred of the working population will have to carry about 45 persons over 65 years of age, assuming that the old people have not saved enough money to support themselves.

The physician will have an important role in adjusting the aging to their changing capacities as more persons reach the older age period. He will be called on to treat larger and larger numbers of patients who suffer from diseases of advanced life. As a result of intensive study being given to this problem by the physicians of this country a new department of medicine was born: geriatric medicine.

The constant growing interest and application of the advances of medicine, surgery and allied sciences have resulted in an extension of the life span from 42 years in 1900 to 65 years in 1944. The ever increasing number of people in the older age groups have created new problems, of which the medical profession is keenly aware. One is purely medical and has to do with chronic illness. Its prevention and treatment are receiving the serious consideration of the medical profession. The other is a social problem and has to do with employment and security.

The problem of the chronically ill and the increase in the older age groups has its origin in the drastic changes in the causes of death which have occurred as a result of the advances in medical science and public health during the past fifty years. Among the outstanding achievements of scientific medicine and public health programs were the reduction of infant mortality and the prevention of the acute infectious diseases, such as typhoid, diphtheria, smallpox and scarlet fever, the institution of better sanitation and the improvement in the milk supply, all of which have been great factors in lowering morbidity and mortality among infants and children. The steady reduction in the morbidity and mortality of tuberculosis has been a great triumph for modern medicine.

The improved methods of diagnosis and the early recognition of disease resulting in rapid and early cures have been factors in extending the life span. A better brand of obstetrics is being practiced. In 1943 more than 3 million babies were born with the lowest maternal and infant mortality in our history. There has been a great improvement in surgical mortality as the result of better medical education, better training of the intern and resident, advances in preoperative and postoperative care, choice of anesthetic, use of blood plasma, blood transfusions, penicillin and the sulfonamide drugs. All have resulted in saving more lives and having more patients reach older age groups. Operative mortality from prostatic obstruction fifteen years ago varied from 12 to 15 per cent. Thanks to transurethral resection the mortality has been reduced to less than 0.5 per cent, still further increasing the number of people in the older age group. The modern treatment of syphilis will no doubt reduce the number of patients who later on would suffer from mental diseases and various changes in the heart and blood vessels.

From a perusal of the current literature one gains the impression that the subject of the chronically ill patient is a new topic that it is the number 1 medical problem in this country and that the ordinary physician is not interested in this group of patients. I disagree with all three statements.

As a result of the factors that have been mentioned, the number of persons suffering from chronic illness will no doubt increase. In a study of this problem, purely from the point of view of helping the patient, there is no place for padded statistics. We should distinguish between persons who suffer from chronic illness and who are working every day and those who are suffering from a chronic illness that is disabling. The inclusion of remedial conditions is not exactly scientific. Diseases of the female organs, such as chronic vaginitis, lacerations and disturbances of menstruation, diseases of the skin including boils, impetigo, abscesses, chronic tonsillitis, bronchitis, hemorrhoids and deafness seem to me to be wholly out of place. Some deafness can never be cured. The war has done much to point the way. Many patients who were formerly called chronic sufferers have found useful employment in war plants and are doing a magnificent job; for example,

Read before the Institute of Medicine of Chicago at the annual meeting of the Central Service for the Chronically Ill, March 6, 1945.

the man completely deaf makes a perfect riveter. Not only is he conscious of his role in the war effort but he also preserves his self respect by his earnings. Many of the patients who fall into the so-called group of chronically ill are not necessarily thereby rendered invalids or completely handicapped. The patient with a mild hypertension can carry on his usual daily tasks with proper medical supervision and although he may suffer from a chronic illness he is not disabled and certainly does not call for long term hospitalization.

Prevention is and should be the first consideration in treatment. Prevention of chronic illness begins with health education on proper personal hygiene, right living and suitable diet, with particular emphasis placed on the importance of an annual physical examination. This often reveals foci of infection, such as infected tonsils and teeth, which can then be removed long before the arthritis or hypertension begins.

The family has an important role in the care of the chronically ill. The patient's invalidism is too often created or increased as much by the attitude of his family and friends as by the physical condition itself. Friends and relatives in their sympathy for the patient's ill fortune may know of no other way to offer help than to shelter and overprotect the patient to the point where his spirit may develop handicaps more severe than those which cripple his body.

We are living in an era in which many think first of institutions and of governmental aid; what burdens the individual cannot carry, Washington is asked to underwrite. The family spirit has diminished. A change of attitude must take place—that the glory of youth too will vanish and that the young person has an obligation to the other members of his family. We have become so institutionally minded for almost every kind of medical and social problem that we are apt to lose sight of the fact that a label on bricks and mortar does not mean a magical solution of the problem.

Industry too has an important role to play in this problem. Careful consideration should be given to the aging; and effort must be made to place the older worker in a position commensurate with his capacities so that he may feel that he is taking part in production, thereby retaining his self respect. He should not be shunted off into an inconsequential position when he still is able to perform productive work.

As essential as hospitals and institutions are to care for those cases which cannot remain in the home because of the nature of the disease, they are many times abused. The medical profession has been well aware of the need for more adequate provisions for the institutional care of the chronically ill, the convalescent and the incurable. In a report by the Committee on Medical Economics of the Chicago Medical Society [1] it was recognized that the establishment of suitable institutions for these three types will relieve the public hospitals for acute diseases of chronic invalids who no longer need that expensive type of care, that it will afford convalescents an opportunity for complete recovery after severe operations or illnesses, and that it will provide a comfortable home for those incurable persons who are hopelessly handicapped.

Whether or not the chronically ill should be hospitalized in institutions dedicated to that purpose or whether they should be housed in wings built as additions to our present hospitals for acute diseases is a subject still under debate. Some believe that they should be cared for in the separate wings of the so-called acute hospitals and others believe that special hospitals should be built for that particular purpose.

In planning for extension of institutions or hospitals for the future, we should bear in mind the fact that prevention may reduce the number of cases that will require institutional care and that such extensive expansion might not be necessary.

Certainly for those patients for whom any significant degree of rehabilitation can be anticipated, active steps must be taken to restore independence and self reliance as fully and as rapidly as possible. This is of fundamental importance not only to the patient and his family but to society, and efforts must be made as fast as possible to provide the additional facilities and services needed in our communities to accomplish this.

Management of these patients depends in part on the severity and in part on the type of illness. A certain number of them can be managed as ambulatory patients in the home, with visiting nurse and medical services. When a patient has to be hospitalized, hospitalization should be continued until he can return to his home.

For the aged who are fairly active physically and mentally and are still continuing with their work, it has already been mentioned how their mental attitude and morale are sustained if they are given employment.

Those who are fairly normal mentally but are physically disabled and dependent, medical service which is palliative should be given so that they may not suffer needlessly. Commitment to an institution should be deferred as long as possible, as the home accords them the happiest surroundings and their usefulness can be maintained by giving them some light duties to perform. These people, if committed to an institution, soon become helpless old men and women, because mental changes are hastened by the shifting of the environment.

The group which needs either skilled nursing care or intensive medical treatment can be confined to a hospital designed for this purpose.

For those who are completely helpless and permanently incapacitated, domiciliary care is all they need.

POSSIBLE STEPS TOWARD MEETING THE PROBLEM

The existing facilities in most communities for the care of the chronically ill are inadequate, and a well planned and integrated service is needed. Before this can be accomplished, some clear thinking on the basic issues which are involved is necessary. A practical program for meeting the problems of chronic illness must look ahead far into the future. The problems involved are too big and too complex to give promise of any simple or early solution, and we must shape our activities toward long-term objectives. These objectives will of necessity be achieved through various approaches, chief among which will be:

1. The prevention and alleviation of chronic illnesses and the disabilities which they cause. This I have already discussed earlier in this paper. To reiterate, the medical profession is interested both in the prevention and in the treatment of chronic illness.

2. The provision of institutions and other facilities and services for the care and treatment of patients already disabled by chronic illness.

3. A sound method of meeting the costs of care for those patients who are financially unable to meet their own expenses.

1. Report of the Medical Care Required and Available in Cook County, A Study by the Committee on Medical Economics of the Chicago Medical Society, May 1939.

Before any sound program can be instituted, careful and serious consideration must be given to the fundamental questions, as:

1. The relative distribution of responsibility which should be maintained by voluntary, philanthropic and proprietary services for establishing and operating the necessary homes and hospitals.

2. The responsibility which should be assumed by the government for the indigent.

3. The desirable size and location of the facilities to be established.

4. The extent to which beds are needed in hospitals or treatment centers as distinguished from homes for patients who cannot hope to profit from treatment and need only continued personal care and nursing attention.

5. The most satisfactory method of financing care for patients unable to pay the costs of care, in whole or in part.

6. The most effective means of maintaining adequate standards of care in institutions serving these patients, i. e. through licensing laws, periodic inspection by state or local authorities, and so on.

Whether there are to be special institutions for the chronically ill, i. e., chronic disease hospitals separate and apart from those serving acutely ill patients, or whether they are to be separate wings or additions to these hospitals. Much discussion must be given to this question.

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INFLAMMATORY LESIONS OF THE UPPER GASTROINTESTINAL TRACT

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It is some years since we who are interested in the surgical and medical aspects of lesions of the gastrointestinal tract have had the opportunity to meet in joint session to discuss and consider subjects of mutual interest and concern. In the period of time allotted to me I shall confine my remarks to a discussion of certain advances in the diagnosis and treatment of lesions of the stomach and duodenum that have taken place in this period.

An additional duty has been imposed on us at this time to evaluate and apply the observations made by medical personnel of the armed forces to the civilian population, and the continuation of the care of those members of the military forces who are returning home with lesions of the upper digestive tract.

CRITERIA FOR HEALING OF ULCERATING LESIONS OF THE STOMACH

It is essential that, if possible, a patient who has an ulcerating lesion of the stomach be assured that it is completely healed and remains healed. Although the location and size of the ulcerating lesion have certain prognostic significance, and Palmer [1] has shown that certain ulcerating malignant lesions of the stomach may heal and confuse the picture, the following will, in a majority of instances, serve as a guide:

1. A complete cessation of all symptoms.
2. Maintenance or gain in weight.
3. Persistent absence of occult blood from the feces.
4. Disappearance of the anemia of the iron deficiency and essential factor type.
5. A normal sedimentation rate.
6. Roentgenologic evidence of complete healing.
7. If possible to secure, confirmation by gastroscopy.

Only by repetition of these studies over a period of four to six weeks' observation can we make any inroads on the difficult problem of determining whether an ulcerating lesion of the stomach has healed and remained healed and is thus most likely benign. If this does not occur, the patient is entitled to surgical intervention.

ROUTINE OR MASS X-RAYING OF THE STOMACH AND DUODENUM OF PERSONS WITHOUT GASTRIC SYMPTOMS

Fordyce B. St. John [2] has routinely examined the stomach and duodenum of 2,413 patients without digestive symptoms by fluoroscope and revealed 54 with deformed duodenal bulbs without symptoms of ulcer (some of these were actual craters but the majority showed deformity of healed ulcers), 7 with cardiospasm, 25 with diaphragmatic hernias (2 very large), 2 with carcinomas of the stomach, entirely unsuspected, which were the earliest that ever occurred in their practice, 1 with lymphosarcoma of the stomach and 1 with a gastric polyp. A number of functional derangements were revealed by alterations in motility, tone and emptying time. This is an outstanding advance and one which we must all heed and consider. One might argue that such fluoroscopy is inaccurate. Nevertheless, the fluoroscopies were performed by experienced roentgenologists, and, as it has been said, "An examination is as good as the roentgenologist and no better." Their concern was whether or not the stomach or duodenum showed any abnormality. Fluoroscopy of the upper gastrointestinal tract may in time occupy the same position as similar studies of the lungs.

PEPTIC ULCER IN CHILDREN

Bird, Limper and Mayer have collected 243 proved cases showing that, in a group of 111 from infancy to age 7, the ulcers were of an acute nature but that those that occurred between the ages of 7 to 15 possessed characteristics more of the nature of that which occurs in adults. They insist that "peptic ulcer is not as rare in children as it is overlooked." In their series of the 132 older children 78 were male and 45 female. Eighty-five of the ulcers were in the duodenum or pylorus. I have observed 2 duodenal ulcers during the past year in children of 10 and 16. In the boy of 16 the onset of definite periodic distress was at the age of 12, and in the child of 10 the onset was at the age of 8. These 2 ulcers were of the chronic type and not the superficial that is so often spoken of as occurring in childhood.

The conclusions that may be drawn from this group are:

1. Children with continued digestive disturbances should have their upper gastrointestinal tract studied by means of the x-rays to reveal the possibility of the presence of peptic ulcer.

2. In view of the fact that the psychosomatic factors are considered of great etiologic significance in

Read before the joint meeting of the Section on Surgery, General and Abdominal, and the Section on Gastro-Enterology and Proctology at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 16, 1944.

1. Palmer, W. L.: The Healing of Carcinomatous Gastric Ulcer, to be published.

2. St. John, F. B.; Swenson, P. C., and Harvey, H. D.: An Experiment in Early Diagnosis of Gastric Carcinoma, Ann. Surg. **119**: 225 (Feb.) 1944.

peptic ulcer in the adult, what are these factors in childhood? We know that children present many psychiatric problems, but I am not sure that they are of the same nature as those that occur in adults. These in the adult are considered of direct relationship to the intense, active type, or, as Sara Jordan [3] designated them, "the doers." It is evident that we shall have to correlate those of the child and the adult in a consideration of causative factors.

INDICATIONS FOR THE SURGICAL TREATMENT OF ULCER

1. Perforation.
2. Recurring hemorrhage or hemorrhage in the older ulcer type.
3. Pyloric obstruction.
4. Suspicion of the presence of a malignant ulcer.
5. Revamping of previous surgical procedures.
6. Frequent recurrence, intractibility to medical care.
7. The type of work of the individual and necessity of his rapid resumption of essential work.

EARLY SURGICAL INTERVENTION IN THE INDIVIDUAL WHO CANNOT INDULGE IN PROLONGED MEDICAL CARE

In a recent communication on the management of peptic ulcer of both the stomach and the duodenum, largely duodenal, in Navy personnel, Walters and Butt [4] stated that they believe that possibly a larger majority of these patients who have active, chronic or recurring ulcers may be returned to active duty at sea or in a combat zone if partial gastrectomy is performed. They state that a surgical operation should be performed on the basis of the reasons I have previously mentioned but emphasize that the decision to do this might be reached without too much delay or long periods of medical treatment. Of a group treated medically, 25 per cent were returned for further repeated periods of hospitalization and medical care. They concluded that a higher percentage treated surgically were returnable to active duty and remained well and that surgical treatment deserves wider use but frankly stated that this needed further study to determine whether radical treatment by gastric resection is warranted and that a comparison of those treated by early surgical intervention and medical methods must be made to evaluate the inauguration of this early radical surgical procedure.

It is evident that we who are interested in the medical management of peptic ulcer and attendant difficulties must as far as possible come to some common ground of application of accepted principles if we are to succeed in removing the term "intractability" to medical treatment as an indication for surgical intervention. In 1943 Boles [5] well said "Before one advises operation, however, for a so-called intractable ulcer it should be thoroughly understood that it is the ulcer and not the patient that is intractable. Intractability of a patient is not going to be cured by any surgical operation." At that time Sara Jordan emphasized that she believed that the patient was frequently intractable, and I should like to suggest, in addition, that perhaps the physician is intractable to the intrusions on his time in explaining the situation to the patient.

This leads to the inquiry What is adequate medical care? How can one determine intractability? Is it the ulcer or the patient that is intractable?

3. Jordan, Sara M., in discussion on Boles.[5]
4. Walters, Waltman, and Butt, H. R.: Management of Ulcers Among Naval Personnel, Ann. Surg. **118**: 489 (Oct.) 1943.
5. Boles, R. S.: Prevention and Management of Peptic Ulcer, J. A. M. A. **121**: 640 (Feb. 27) 1943.

FREQUENT RECURRENCE; INTRACTABILITY TO MEDICAL CARE

Millions of American men and women have been examined and x-rayed by induction boards and by Army and Navy medical personnel. And thousands of peptic ulcers have been discovered, treated and classified as cured, and individuals returned to civilian life to continue under the observation of their family physician. This new responsibility is now ours, but these examinations also unfortunately revealed that there were numerous patients with peptic ulcer who had not sought medical care, and not been diagnosed, or treated adequately.

Modern medical trends have developed the pediatricians, who have adequately cared for us up to the time we enter the educational or working fields, and deep interest has been evinced by clinicians in the group from age 35 on. The age period of 18 to 35 has been considered man's best health period, but it is in this group that early tuberculosis, diabetes, syphilis and rheumatic heart disease have been discovered. Army examinations suggest that we have, in this age group, a number of patients with undiscovered and incompletely treated peptic ulcers.

This is in part due to the fact that the patient with epigastric distress and discomfort is rapidly relieved by taking proprietary, advertised antacid substances so that he never seeks the physician for study, or on the inauguration of treatment by the physician the therapeutic response is so spectacular that roentgenologic studies and follow-up observations are not carried out over a long enough time to make a diagnosis and substantiate a cure. It is evident that these are some of the factors that result in the production of the intractable ulcer.

Therefore, in order to inaugurate adequate treatment to prevent intractability of both patient and ulcer young persons must be educated to the fact that if they have upper gastrointestinal symptoms over a period of time they should seek medical care, and no patient presenting himself to the physician with a history of periodic epigastric distress lasting over a period of two weeks should be denied a careful history and roentgenologic studies.

Those interested in tuberculosis have formulated plans and procedures to meet this problem, and similar efforts are being made by physicians devoting their attention to the diabetic and to patients with rheumatic heart disease. And now we have had revealed to us the necessity of inaugurating and carrying out a similar program in order to control and cure peptic ulcer in its incipience.

From the vast wealth of material as to the etiology of peptic ulcer, most of us believe that the following facts can be stated:

1. For some undetermined reason an area of the stomach and duodenum loses its ability to resist the digestive action of the acid-peptic secretion.

2. Surgical experience extending over a period of years seems to reveal that the production of the achlorhydric stomach is necessary in order to avert postoperative peptic ulcer.

THE EXISTENT STATE OF THERAPY

Surgeons went through a period of various operations (pyloroplasty, gastroenterostomy, partial resection, resection, denuding of the lining, jejunal implants, severance of nerve connections, alterations in the position of new openings) and other procedures too numerous to mention. They have benefited by their experience

and have emerged with procedures for the production of achlorhydria as the basic principle of their treatment.

It is interesting to note that this idea was first laid down as a medical dictum, and it is my intention to discuss the possibility that we may not have emerged from our state of medical confusion. This is indicated by the following list of antacids, adsorbers and antispasmodics offered to us to control the acid-peptic secretion, motility, tone and color (engorgement) for the treatment of peptic ulcer:

Alkalis.—Alcaroid, Alucol, Alutabs, Anachloric Tablets, bismuth salts, Bisodol, Cal-Bisma, calcium carbonate, calcium phosphate, Ca-Ma-Sil, cerium oxalate, Citro-Carbonate, compound chalk powder, Creamalin, creta preparata, kaolin, liquor calcis, magnesium carbonate, magnesium oxide, magma bismuth, milk of magnesia, mistura cretae, Neutralon, Nutrachloric Tablets, pulvis cretae aromata, sodium bicarbonate, Tri-Calsate, Trimax Tablets.

Alumina and Trisilicate.—Amphojel, Alumina-Gel, aluminum hydroxide, aluminum silicate, gastric mucin, Gelusil, Kaomagma, Magmasil, Malcogel, Metamucil, Trinesium, Trisogel.

Miscellaneous.—Atropine sulfate, belladonna, Bellafoline, Bellafoline and Phenobarbital, Bellergal, novatropine, papaverine, Pavatrine, Syntrogel, Syntropan, Trasentine, histidine, Larostidin.

PHYSIOLOGIC FACTORS

1. As shown by others and spectacularly this year by Wolf and Wolff[6] in their patient with a gastric fistula and a portion of the stomach herniated on the abdominal wall, resentment, hostility, anxiety and aggressiveness produced hypersecretion, hypermotility, increased congestion, deeper color and even superficial ulceration. On the other hand sadness, discouragement and self reproach produced pallor of the mucosa under observation and hyposecretion.

2. Acid gastric secretion is controlled by the sight of food, the odor of food, the presence of food in the stomach and intestine, through endocrine factors and secretagogue substances in the prepyloric portion of the stomach and intestine.

TREATMENT

The young person with periodic distress and discomfort in the epigastric area with relief through food or alkali must have a fluoroscopy done. If he presents the psychosomatic make-up I have mentioned, and if he has hypermotility and hyperirritability of the prepyloric region of the stomach or duodenum, I think he should be considered as possessing the precursors of peptic ulcer, and rather than waiting for the formation of a definite crater should be treated accordingly and observed over a period of time.

First Phase.—Early peptic ulcer patients discovered in this manner will respond to a broad generous diet with an elimination of only the condiments and roughage, the most important factor being the timing of the taking of their meals. They should have their three regular meals a day and, in addition, feedings between meals and at bedtime and should be awakened once at night for a feeding, which should consist of sweet cream, eggnogs or bread and butter. Alcoholic drinks should not be taken. The treatment of the diabetic was a failure on the strict, narrow diet list, and we must not fall into that error. As has recently been shown by Ivy,[7] excess caffeine intake is to be avoided; but a cup of coffee, one half cream, once a day may satisfy a dietetic habit and give one a more cooperative patient. The same may hold for smoking. It has not been possible to show, in the gastric fistula man, that restricted smoking produces any of the evidences mentioned under the psychosomatic factors.

The Second Phase.—This part of the treatment is the most difficult—that is, the removal of the psychosomatic factors. This can be accomplished by the presentation to the patient of some of the booklets on ulcer such as prepared by Crohn and by Alvarez. They are excellent. I do not think they take the place of the period of time spent by the attending physician in meeting the problems of the individual. If we are to succeed in the treatment of the disease, this must be done. Every practicing physician and surgeon must grasp some of the fundamentals of the simple psychology necessary to handle these patients. There are not enough trained psychologists to handle the already existent serious cases, and classes have had to be formed to take care of that situation.

The ulcer patient should be treated with wise counsel and adjustment and a personal form of psychiatry such as the following:

George, you have an ulcer in your stomach outlet. This sore may be produced by powerful acids in your stomach. Anxiety, resentment, hostility, fatigue and aggressiveness make the stomach too active and secrete too much juice. When you get angry, flare up and get upset about things at home and the office you offset much of the medical care you are following. You must take your medicines regularly and follow your diet or it will not heal. These ulcers usually do not rupture or turn into cancer if you follow out these simple instructions.

Under the educational plan and the diet, a vast number of ulcer patients feel safe and protected and show immediate improvement. Substantially this is what hospitalization accomplishes. Then your strong weapon is to have them return in four weeks for fluoroscopy. The imparting of the information that it is healing is an added stimulus to cooperation.

After eight to ten weeks and thereafter for one year have this patient return for fluoroscopy and a bit of conversation, and you will be astonished at the excellent results. It is unnecessary to take a plate except for the first time for record. The patient is pleased with your interest, and you get the same cooperation that you do from the patient who is taught to test his urine for sugar, and takes pride in reporting the fact it is negative.

"The dietetic-educational" plan as outlined demands the time and attention of the physician. Patients who fail to respond to this form of treatment in ten days will need the introduction of therapeutic agents. Here also timing is vital.

Sedatives.—A simple sedative such as phenobarbital alone, and not in combination, and in the tablet form, at a dosage of ½ to 1 grain (0.03 to 0.06 Gm.), is administered half an hour before meals and at bedtime as a psychologic block. It should not be combined with any other agent, because one cannot in this way manipulate the dose according to its effect. One important point is the necessity at times of administering a sedative of this type previous to a period of anticipated stress or strain.

Alkalis and Adsorbers.—One, two and three hours after meals administer a 15 grain (1 Gm.) tablet or capsule of calcium carbonate, prescribing a hundred at a time. This will last the patient approximately ten days and conveys to him the necessity of carrying out

6. Wolf, Stewart, and Wolff, H. G.: Human Gastric Function, New York, Oxford University Press, 1943.
7. Ivy, A. C.: Subacute Gastric Ulcers, Gastroenterology **2**: 274 (April) 1944.

his therapy over that period of time. Calcium carbonate is official. It is an excellent neutralizer. It is without systemic effects.

We are also concerned with the fact that peptic activity enters into the etiology of ulcer. It has been shown by Komarov [8] that mucoproteins inhibit peptic activity. Aluminum hydroxide possesses the property of precipitating mucoproteins and aids in diminishing peptic digestion. Aluminum hydroxide tablets each containing 10 grains (0.6 Gm.) can be used similarly to calcium carbonate. Aluminum products act by neutralization and adsorption and bottling up of the hydrochloric acid.

Both of these agents may produce obstipation, and fecal impaction should be avoided by the use of plenty of fluids and the rectal instillation of liquid petrolatum or a glycerin suppository.

Belladonna.—We may be able to block out impulses over vagal routes by the use of belladonna. Extract of belladonna must be given in dosage to produce dryness of the mouth and blurring of the vision in order to diminish the hypermotility and tonicity of the stomach. It is useless to administer it and hope for results unless this is done. It is necessary to get therapeutic action the same as one digitalizes a patient.

It is advisable to use extract of belladonna ⅛ grain (8 mg.) because it is more controllable and give it twenty minutes before meals. Its use in the liquid form or in combination with other agents may be inaccurate. The physician prescribes in drops and gives too small a dose or, if he prescribes in minims, fails to supply a standardized minim dropper or glass. It should be noted that belladonna decreases the secretion of mucin, which evidently is one of the protective factors of the mucosa of the stomach against hydrochloric acid.

Driscoll and Aaron,[9] in an analysis of 160 cases of carefully followed peptic ulcer, found that the "dietetic-educational" plan with the proper timing of the administration of medicinal agents suggested was the most successful in their hands in the treatment and prevention of peptic ulcer.

CONCLUSIONS

An ulcerating lesion in the stomach must by accepted standards be proved to have healed and remained healed.

Mass x-ray examination of persons without gastric symptoms seems a logical step in the discovery of early lesions of the stomach and duodenum.

Peptic ulcer in children may be overlooked.

Hypermotility and irritability of the stomach in young people with a certain psychiatric makeup offers fertile ground for the formation of peptic ulcer.

Peptic ulcer has been undertreated rather than overtreated.

The timing of the taking of food and the administration of therapeutic agents is essential.

Diet, education and the physician's interest in the patient's problems may prevent intractability.

The premise of this treatment is that we are attempting to treat the preulcer or early ulcer case, and thus it is ambulatory in its type.

A small group of therapeutic agents used over a period of time gradually will aid in the elimination of the existent therapeutic confusion.

40 West North Street.

8. Komarov, S. A., and Komarov, O.: Precipitability of Pepsin by Colloidal Aluminum Hydroxide, Am. J. Digest. Dis. **7**: 166 (April) 1940. Schiffrin, M. J., and Komarov, S. A.: Inactivation of Pepsin by Compounds of Aluminum and Magnesium, ibid. **8**: 215 (June) 1941.

9. Driscoll, E. F., and Aaron, A. H.: Response to Treatment of Peptic Ulcer, New York State J. Med. **44**: 266 (Feb. 1) 1944.

INFLAMMATORY LESIONS OF THE STOMACH AND DUODENUM

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This paper deals with the acute and subacute processes associated with peptic ulcer. Duodenitis as an entity unrelated to duodenal ulcer is so rare that its surgical consideration is unnecessary. Gastritis, on the other hand, is a different problem. The type of gastritis so commonly associated with malignant lesions may not be an inflammatory process, and certainly the acute gastritis so often associated with alcohol and other chemical irritants need not be considered here. This paper, therefore, will be limited largely to the inflammatory lesions promoted by peptic ulcer, gastric, duodenal and jejunal.

A few years ago a discussion of "Inflammatory Lesions of the Stomach and Duodenum" would have been devoted largely to the value of medical treatment versus surgery. Today the ulcer problem has attained a satisfactory degree of standardization and agreement between the advocates of the two methods of treatment.

I should like to discuss the changes and modifications of our views on the basis of experience with 8,516 patients with ulcer under bed management. Of this number 571 were gastric ulcers. The medical profession has in the past erred in the management of gastric ulcer by being too radical, with the idea that all gastric ulcers should be submitted to subtotal gastrectomy and also at times by being too conservative, with the result that early gastric carcinoma has been overlooked.

There is a compromise between these two positions. On the other hand, the depressing results in the treatment of carcinoma of the stomach with its low operability rate, high mortality and limited number of nonrecurrences at the end of five years properly encourages a more aggressive point of view concerning the management of patients with suspected gastric cancer.

Our criteria against surgical intervention in the gastric ulcer patient are that the lesion under medical management must disappear by roentgenologic examination, the patient must be symptom free, occult blood must disappear from the stools, and gastroscopic examination must show that the mucosal defect made by the ulcer is completely covered over in healing. If these conditions are maintained for a year, subtotal gastrectomy can be omitted, since medical treatment has been successfully applied.

I have never seen a benign ulcerating lesion of the greater curvature. While these have been reported, anything other than radical surgery for the patient with an ulcer on the greater curvature is futile.

Prepyloric gastric ulcers are extremely dangerous but not necessarily malignant, and they may with safety be given the aforementioned trial of medical treatment.

I wish to call attention again to a condition previously described by Dr. Jordan and me; that is, a persisting prepyloric spasm which on roentgenologic examination resembles cancer and does not disappear on treatment. In such cases exploration is justified after explaining to the patient the probability of negative findings. Even though exploration is negative, that is better than letting an early malignant lesion become inoperable.

From the Department of Surgery, the Lahey Clinic.

Read before the joint meeting of the Section on Surgery, General and Abdominal, and the Section on Gastro-Enterology and Proctology at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 16, 1944.

If a gastric ulcer fulfils the requirements, closes and then reopens, this patient is an immediate candidate for high subtotal gastrectomy.

In doubtful gastric lesions and in those which have closed, the responsibility for reexamination every two months for a year should not be left to the patient but should be assumed by the physician. From experience I have learned that if the responsibility is left with the patient he may fail to return until too late, when an earlier check would have made surgical removal possible. The patient should be informed that if he does not return when notified and develops an inoperable lesion the responsibility is his. Only by this precaution of not leaving the responsibility with the patient can the occasional early malignant lesion be found early enough to make a cure possible.

Duodenal ulcer continues to be more common than gastric ulcer, and while it does not involve the problem of malignant degeneration it is much more complicated than gastric ulcer and has a greater potential variety of troublesome complications.

The management of duodenal ulcer remains essentially the same. For perforation the only treatment is

TABLE 1.—*Results of Tube Drainage—Cases in Which Operation Was Not Done*

Case	Duration of Obstruction	Residue %, 6 Hours	Tube Drainage, Oz. per Day	Operation	Recurrence
1	6 mo.	90	41-24-18	No	Yes, 1 yr., operation
2	2 mo.	Large	34-38-7-2	No	
3	?	25	22-27-35-1-0	No	
4	3 wk.	90	50-42-24	No	Yes, 1 yr., operation refused
5	3 mo.	Large	31-34-40	No	Yes, 6 mo., operation
6	?	Trace	53-19-18-10	No	
7	10 days	Trace	23-22-30-9	No	Hemorrhage, 2 mo., operation
8	4 mo.	50	45-20-4	No	
9	10 mo.	Trace	26-22-6	No	
10	2 wk.	10	21-30-9-3	No	
11	2 yr.	90	44-45-50-41	No	Yes, 3 mo., operation
12	2 mo.	70	24-5-1	No	
13	2 yr.	?	56-23-31-17-19	Refused	
14	3 mo.	90	20-5-1	No	Yes, 6 mo., operation
15	?	50	10-10-10-4	No	

When the drainage decreased, operation was unnecessary, but when it did not, operation ultimately had to be performed in most cases.

simple closure of the ulcer. The physician has one obligation in the presence of a perforated ulcer and that is the saving of the patient's life, delaying all other therapeutic measures, medical or surgical, until this is accomplished.

Intractable pain, after good medical management, involves either the acceptance of the pain or a surgical procedure.

There are two distinct types of pyloric obstruction. Cicatricial pyloric obstruction which is produced by the contracting scar of a healed ulcer causes no active ulcer symptoms. Since this type of obstruction is purely mechanical in character, gastroenterostomy justifiably can be applied.

The second type of pyloric obstruction, which is associated with a chronic or subacutely active duodenal ulcer, is caused chiefly by the scarring due to repeated ulcer activity. Some of the obstruction is due to associated edema and pylorospasm. When such a patient has been put to bed, with neutralization and rest, the pylorus often has been opened, only to close again after dismissal from the hospital and resumption of activity under the stress and strain under which the original pyloric obstruction developed.

For years we sought to establish a plan whereby we could foretell earlier which patient with pyloric obstruction would have a prospect of remaining free from recurring pyloric obstruction. In 1941 Dr. S. Allen Wilkinson of the Department of Gastro-Enterology of this clinic published such a plan, the results of which

TABLE 2.—*Results of Tube Drainage—Cases in Which Operation Was Done*

Case	Duration	Residue %, 6 Hours	Tube Drainage, Oz. per Day	Operation	Result
1	3 mo.	100	32-25-46	Posterior gastroenterostomy	Good
2	4 wk.	?	26-26-30-22-38	Posterior gastroenterostomy	Good
3	?	100	26-58-44-60	Posterior gastroenterostomy	Carcinoma of pylorus, age 46
4	5 mo.	Large	35-40-42	Posterior gastroenterostomy	Good
5	2 yr.	100	33-76-80	Posterior gastroenterostomy	Good
6	4 mo.	100	85-65-50	Subtotal gastrectomy	Good
7	2 yr.	90	66-74-60-40	Posterior gastroenterostomy	Good
8	8 mo.	50	41-11-18-35-31	Posterior gastroenterostomy	Good
9	10 yr.	100	46-30-27-30-25	Subtotal gastrectomy	Good
10	1 mo.	90	44-42-38-42	Subtotal gastrectomy	Good
11	2 mo.	90	24-28-31	Subtotal gastrectomy	Good
12	2 mo.	?	28-22-23-28	Subtotal gastrectomy	Carcinoma of pylorus, age 30
13	1 yr.	90	89-115-92-63	Subtotal gastrectomy	Good

When operation was performed, the drainage persistently remained high over a three day period.

are shown in tables 1, 2 and 3. It consists in the introduction of a Levine tube, which is retained in the stomach for three days. Three ounces of a noncurding mixture, preferably malted milk, with or without a dram of aluminum hydroxide mixed with it, is administered hourly. The tube is clamped for the first half hour and unclamped for the second half hour. This process is continued for twenty-four hours during three days. The total drainage for the second half hour is computed daily and recorded. When within three days there is no demonstrable drop in the amount of residue within the stomach, patients usually should be operated on at once to avoid delay and expense. While this plan cannot be accepted as 100 per cent reliable, it is a real aid in segregating those patients with pyloric obstruction

TABLE 3.—*Results of Drainage in 100 Cases*

Obstruction Less Than 3 Months		Obstruction More Than 3 Months	
Relieved	Recurred	Relieved	Recurred
61%	39%	31%	69%

Total relieved by drainage, 56.
Total ultimately operated on, 44.
The longer the obstruction had been present, the more often it recurred.

who need early surgery from those in whom there is a reasonable prospect of permanent reopening of the pylorus under medical management.

Of all the indications for surgery in peptic ulcer, exclusive of perforation, hemorrhage in spite of adequate medical management is the most common and most definite indication for subtotal gastrectomy. Hemorrhage in the patient who has had good medical treatment

indicates that the ulcer is continuing to extend and erode. In addition, the ulcer is in all probability on the posterior wall and consequently will be most difficult to close and keep closed under medical management.

There are two types of ulcer bleeding, the common type with one or two hemorrhages from which the

Fig. 1.—Note jejunal ulcer adherent to transverse colon. This patient was submitted to subtotal gastrectomy. The jejunal ulcer had eroded the muscular walls of the colon, leaving a covering only of mucosa.

patient recovers, and the recurring type, massive in character, in which something must be done if the patient is to be saved. One does well to recall that hemorrhage in patients over 50 years of age is more serious than

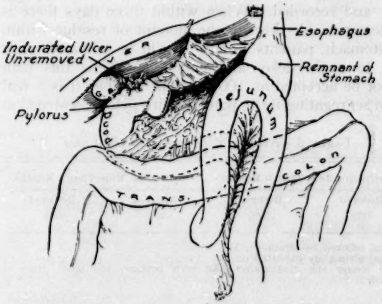

Fig. 2.—The Finsterer resection by exclusion. Note that the ulcer and pylorus are left in place. It is in this operation, which we now employ only as the first step of a two stage procedure with later removal of the ulcer and pylorus, that the highest incidence of gastrojejunal ulcer occurs after subtotal gastrectomy.

in younger patients. Also, if surgery is to be undertaken, it must be done within forty-eight hours; otherwise, regardless of repeated transfusions, the mortality is prohibitive.

Primary jejunal ulcers have been reported, but they are so unusual that they hardly merit discussion. For practical purposes jejunal ulcers are associated either with gastroduodenostomy, gastrojejunostomy or subtotal gastrectomy. The incidence of these lesions following gastroenterostomy is at least 15 per cent and probably higher. The incidence following subtotal gastrectomy is in the neighborhood of 2 to 3 per cent.

Formerly it was generally accepted that gastrojejunal ulcers were so intractable to medical treatment, so apt to perforate and bleed, become adherent to the transverse colon and produce a gastrojejunocolic fistula, that they should all be operated on at once. We have managed a sufficient number of these ulcers successfully under medical treatment that we feel justified in giving all patients with gastrojejunal ulcers, with one exception, a trial of medical management. If a gastrojejunal ulcer is adherent to the transverse colon, it should be operated on without delay. In this type of ulcer which is about to perforate into the transverse colon and produce the gastrojejunocolic fistula with its physiologic complications and its technical surgical complications, surgery is necessary (fig. 1). Even

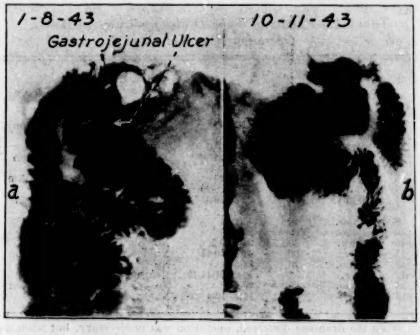

Fig. 3.—a, the gastrojejunal ulcer after subtotal gastrectomy; b, healing of ulcer two weeks after removal of ulcer and pylorus. Patient has remained entirely free from symptoms for a year.

though some of these ulcers do not heal under medical management, the induration about them and in the root of the mesentery of the transverse colon frequently is so lessened under this treatment that technical management is made much easier.

On the basis of our experiences with gastric resection of the so-called Finsterer exclusion type, I wish to warn against this procedure. Any surgeon who has done many subtotal gastrectomies for duodenal ulcer frequently has encountered the low type of duodenal ulcer which involves the common duct in its exudate and scar or which, as a result of repeated inflammatory reactions, has so shortened the duodenum that the point of entrance of the common duct has been drawn up into the ulcer exudate and scar. Removal of such an ulcer often leaves the duodenal stump so short that safe inversion and closure is either impossible or extremely difficult and dangerous. In order to remove this type of duodenal ulcer, I sometimes have resected the common and pancreatic ducts and implanted them into the distal loop of the jejunum after subtotal gastrectomy. This is a risky undertaking. Earlier in our experience, when we had dealt with fewer of these

indurated ulcers adherent to the common duct, a subtotal gastrectomy sometimes was done, leaving a small portion of the stomach proximal to the pylorus which has been cut across and turned in in order to avoid the hazards of taking these ulcers off the common duct. This is the operation described by Finsterer as resection by exclusion (fig. 2). In this type of resection, of which we have done twenty, the highest incidence of gastrojejunal ulcer in the stump of the resected stomach has occurred.

For many years we have been warned that to leave the ulcer in the pylorus in such an operation results in promoting high gastric acidity in the remaining portion of the stomach and so increases the incidence of gastrojejunal ulcer. In our experience secondary removal of the remaining stump of duodenum and pylorus has been most gratifying in lowering gastric acidity and in healing the gastrojejunal ulcer in the remaining gastric stump.

The following brief statement of such a striking case illustrates what prompt and dramatic relief can be accomplished in these cases when the operation is directed at the remaining ulcer, duodenum and pylorus rather than at the gastrojejunal ulcer in the remaining gastric stump:

In a case of duodenal ulcer there were recurring hemorrhages on Dec. 2, 1931, May 3, 1936 and June 30, 1936. On July 2, 1936 a high subtotal gastrectomy was done, leaving the duodenal ulcer and pylorus on account of adherence to the common duct. Hemorrhages occurred on Jan. 14, 1939, Sept. 11, 1939, May 23, 1940, Jan. 27, 1941, July 10, 1941, Aug. 20, 1941 and Sept. 2, 1941. Secondary subtotal gastrectomy with gastrojejunal ulcer was followed by another gastrojejunal ulcer with repeated hemorrhages and ulcer pain so severe as to require morphine. On Sept. 21, 1943, removal of the duodenum and pylorus with the contained ulcer resulted in immediate relief of pain and a free hydrochloric acid of 8. The ulcer healed while the patient was still in the hospital. Ability to take a full diet was restored. The patient was entirely free of pain and hemorrhage (fig. 3).

Fig. 4.—Prompt filling of stomach by barium given by enema.

Since secondary subtotal gastrectomy on a patient with a gastrojejunal ulcer is technically difficult, I believe on the basis of our experience it is justifiable,

Fig. 5.—Demonstration of the fistulous tract from the stomach into the jejunum and colon.

when a Finsterer resection by exclusion has been performed, to remove the original ulcer and pylorus rather than do a secondary subtotal gastrectomy.

Of all the complications of peptic ulcer, the one which most seriously affects the health of the patient and is technically most difficult to manage is, in my opinion, the gastrojejunocolic fistula. This is a gastrojejunal ulcer which has become adherent to the neighboring transverse colon and has eroded into it. This condition results in deterioration in the patient's general condition, a loss of weight all out of proportion to the lesion itself and alteration of the physiology of the intestinal tract. When the gastrojejunal fistula ruptures into the transverse colon, a portion of the food taken into the stomach passes through the fistula into the transverse colon, creating varying degrees of avitaminosis as a result of a portion of the food failing to pass through the small intestine. In the reverse direction, feces constantly are escaping from the transverse colon into the stomach to be belched as skatole laden flatus, thus seriously interfering with the desire for food.

The diagnosis of this condition often can be made by the passage of undigested food in the feces, owing to the fact that it has passed from the stomach directly into the transverse colon, by diarrhea and by the unusual and extreme emaciation associated with this fistula. In addition, the lesion usually can be demonstrated quite clearly by means of a barium roentgenogram (figs. 4 and 5).

Over the years I have tried a variety of operative procedures by which I had hoped to improve the surgical management of this complicated lesion. To undo the transverse colon from the jejunum and the stomach in the presence of a large feces-contaminated fistula, with the possibility of spilling the fecal contents of the transverse colon into the peritoneal cavity, is a hazardous procedure.

Some years ago I applied the principle of cutting off the ileum just proximal to the ileocecal valve, turning in the distal end and anastomosing the proximal end by lateral or end to side anastomosis high to the descending colon (fig. 6). This advances the fecal stream behind the gastroenterostomy and its fistula into the colon and jejunum and results in considerable improvement in the patient's general condition. At the end of two to three months the patient is in excellent condition for the second stage of the operation, which consists in subtotal gastrectomy with the removal of the gastrojejunocolic fistula and affected portion of the colon and jejunum.

At the second operation, with the fecal stream well established in the descending colon by the ileocolic anastomosis, the ascending colon with its blind stump of attached ileum and the hepatic flexure are mobilized, the transverse colon is mobilized and the blood supply of these structures ligated up to and beyond the gastroenterostomy close to the portion of the transverse colon as it approaches the splenic flexure. The transverse colon at the point near the splenic flexure is cut between the two rows of brads inserted by the Petz sewing machine (figs. 6 and 7). The distal end of the transverse colon is inverted, the proximal end is reinforced so that it will not leak on handling, and the ascending colon and the transverse colon are lifted up, thus visualizing the two loops of jejunum running to the gastroenterostomy. These are cut across, thus mobilizing the stomach, the duodenum is cut across and inverted, end to end anastomosis of the two ends of jejunum and the jejunal fossa is performed and a subtotal gastrectomy of the Hofmeister type is then completed without difficulty (fig. 7).

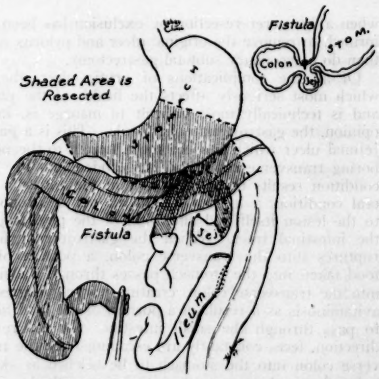

Fig. 6.—First stage of two stage operation for gastrojejunocolic fistula consists in implanting the ileum into the descending colon after cutting the ileum across and turning in both ends. The portions of colon, jejunum and stomach to be removed at the second stage are shaded. The distal end of the ileum is inverted and closed. Inset shows the course of the fistula from the stomach to the jejunum to the colon.

This operation seems, from the description, to be of tremendous magnitude. As a matter of fact, with the removal of the ascending colon, the transverse colon and the loop of involved jejunum, everything is so well visualized with this amount of viscera out of the abdomen that the actual anastomosis of the two cut ends of the jejunum and the subtotal gastrectomy is easier than when an uncomplicated subtotal gastrectomy is performed.

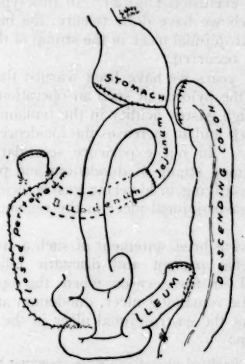

Fig. 7.—Second stage of operation for gastrojejunocolic fistula completed. The colon, jejunum and stomach with gastrojejunal ulcer and fistula have been removed. The jejunum is united by end to end anastomosis and a Hofmeister subtotal gastrectomy performed.

We have now applied this procedure to 13 cases with 1 fatality. It avoids an external fecal fistula, as occurs in a colostomy proximal to the anastomosis, advocated by Pfeiffer. It makes the second stage removal of the colon, fistula, ulcer and stomach much easier.

While it is unlikely that the case here mentioned will be frequently repeated, it is a possibility that spontaneous closure of the fistula into the colon may occasionally occur following the first stage operation as in this case. We have had 1 patient who has gone over a year and a half in whom following the implantation of the ileum into the descending colon the jejunal ulcer healed, the fistula into the colon closed and the man has been entirely free from symptoms.

Our experience in the surgical treatment of peptic ulcer represents the very worst types of peptic ulcer, since every patient on whom we operate is referred by the Department of Gastro-Enterology as hopeless from the standpoint of further medical management. As a result of this we see almost no simple uncomplicated ulcers. These ulcers are of long standing and usually have been through repeated acute exacerbations. The patients have often had repeated hemorrhages, and so they represent almost entirely posterior wall duodenal ulcers, scarred, deformed and calloused in character, often adherent to the bile duct, surrounded by induration and by dense adhesions in a duodenum covered with scar tissue. The gastric ulcers represent those with chronic craters and calloused edges, those that are eroded into the head of the pancreas, and often those high on the lesser curvature. Consequently the mortality figures are those which can be obtained with a truly complicated and intractable type of gastric and duodenal ulcer.

Once surgery is decided on in gastric ulcer, subtotal gastrectomy usually can be done, since involvement of the common duct does not occur. In duodenal ulcer, however, one must frequently modify the 100 per cent application for subtotal gastrectomy as a surgical method of treating these lesions.

In the patient whose ulcer has failed to heal under medical management, we start with the conviction that a high subtotal gastrectomy together with the removal of the ulcer produces in the highest percentage of cases the lowest postoperative figures in acid values. It will usually produce acid values of 10 or below, and when these figures are obtained the end results are good. We are therefore convinced that, when it can be safely applied, a high subtotal gastrectomy, that is, removal of three fourths to four fifths of the stomach together with the duodenal ulcer, is the best surgical method of treating duodenal ulcer. If, on the other hand, we were to employ subtotal gastrectomy in 100 per cent of the cases of duodenal ulcer in which we operate, regardless of the position of the ulcer and the involved structures, the mortality rate would probably be unduly high. In some cases one can to better advantage do a less satisfactory operation, with a better prospect of a live patient. With this position in mind, we have not entirely abandoned gastroenterostomy. We have applied it particularly in the very bad risk case with such complications as kidney damage, cardiac lesions, obesity or any other state which makes the patient an unduly bad risk.

In the indurated duodenal ulcer which is of cartilaginous hardness and so adherent to the common duct or so involves the ampulla of Vater that its resection would result in resection of the common and pancreatic ducts with the necessity of their reimplantation, we believe that a first stage anterior gastroenterostomy or even a gastroenterostomy as a permanent measure is justifiable.

I recently described a method of doing a high antecolic gastroenterostomy after removal of most of the omentum and the transverse colon (fig. 8). In the very adherent indurated duodenal ulcers which have caught the common duct in their scar or exudate, it is possible to employ such an anterior gastroenterostomy high on the greater curvature as a first stage and then do a resection on the adherent duodenal ulcer at the end of four to five months when its induration has quieted down and when it can be approached with greater ease and separated from the common duct with greater safety.

There are a few generalities concerning the problems of peptic ulcer which I believe should be stated. Most patients who have had peptic ulcer have had warning symptoms of its possible onset over a number of months before the ulcer has really occurred. Life insurance companies could well undertake an educational program on the recognition of the early preulcer stages of this lesion when the only symptoms are those of hyperacidity and pylorospasm and urge people so to modify their habits of eating, drinking and smoking that the development of the ulcer could be avoided.

There has always been an attitude on the part of surgeons that, once the patient has had a high subtotal gastrectomy for ulcer, he is free of the ulcer and at liberty to eat and live as he chooses. This is distinctly unsound and unjust to the patient. Any patient who has had an ulcer can develop another and regardless of the extent of surgery is more likely to have one than the patient who has not had one. Any patient who is having his gastric contents dumped directly into his jejunum, particularly if he still has high gastric acidity, can easily develop a gastrojejunal ulcer. I am therefore strongly of the conviction that any patient who has had either radical or conservative surgery for peptic ulcer should be told that, the more accurately he adjusts his eating, drinking and smoking habits for the lowering of the gastric acidity, so much will his chance be lessened of having another ulcer develop.

The mortality of subtotal gastrectomy for ulcer certainly should not be over 3 per cent, even including the gastrojejunal ulcers and the duodenal ulcers adherent to the common duct. In a series of 318 consecutive subtotal gastrectomies for ulcer, 62 of the lesions were in the jejunum. Fifty-six of the jejunal ulcers developed after gastroenterostomy and 6 after previous subtotal resection. Three deaths followed resection for jejunal ulcer, a mortality rate of 4.8 per

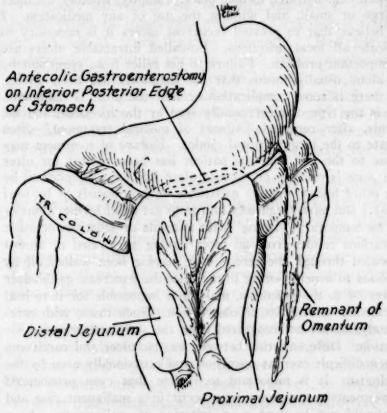

Fig. 8.—Anterior gastroenterostomy after removal of omentum as first stage in two stage removal of active duodenal ulcer adherent to common duct.

cent. The mortality percentage for resection for duodenal and gastric ulcer alone is 2.8 and for all types 3 per cent.

This low mortality, however, can be attained only by those who have had experience with it, and with good anesthesia, preferably continuous high spinal, promoting as it does lasting relaxation at all stages of the operation. Low mortality figures can be attained only when facilities are available for the management of postoperative complications, particularly postoperative atelectasis, which occurs so frequently following operations high in the abdomen, thus interfering with good clearing of the bronchi.

I do not intend to imply that all gastric surgery be sent to a few institutions where the surgeons have had a large experience in this field but rather that subtotal gastrectomy is a technically difficult operation. The lesions are complex in character, and to deal with them requires considerable experience. The surgical management of gastric, duodenal and jejunal ulcer often will tax the skill of the most experienced gastric sur-

geon, and such a procedure should not be undertaken casually and routinely as may many other surgical procedures. My allusion to the necessity that gastric surgery be done by those who are experienced with it is made with the hope of stimulating the reference of enough gastric surgery to a few surgeons in each community in order that they may develop wider experience with these complicated lesions and thus make them more able to keep the mortality rate within reasonable figures.

605 Commonwealth Avenue.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. AARON AND LAHEY

DR. A. F. R. ANDRESEN, Brooklyn: It is known from the history of previous ulcer attacks, and it has been shown by x-ray, that ulcers will heal spontaneously. However, a diet with frequent feedings of bland foods, and avoidance of irritants such as coffee, alcohol and tobacco, will relieve the hunger pains and will facilitate healing. In uncomplicated ulcer this healing has been demonstrated to take place promptly, whether the ulcer is large or small, and without the use of any medication. I still believe that to prevent recurrent ulcers it is necessary to eradicate all focal infections. So-called intractable ulcers are the important problem. Failure to get relief from symptoms by diet alone usually means that the diagnosis has been wrong, that there is some complication or that the ulcer is malignant. This is the type of ulcer usually seen by the specialist, and the patients, after repeated "failures of medical treatment," often migrate to the large surgical clinics. Failure of treatment may be due to the fact that the patient has been treated for ulcer when none is present, or because ulcer has been complicated by some other lesion, such as gallstones or pancreatitis or by food allergy. But most frequently failure to get relief by diet alone or even by temporary "doping" with antacids or sedatives or other medications results from an ulcer having perforated or almost perforated through the serous coat, having been walled off by adhesions to a neighboring organ, like the pancreas, gallbladder or liver or to the omentum, making it impossible for it to heal and causing deformities or obstruction. Such cases, with careful study, should be recognized from the start and prepared for operation. Differentiation between gastric ulcer and carcinoma is often difficult even at operation and occasionally even by the pathologist. It is important to realize that even pronounced improvement in symptoms may occur in a malignant case and this should not be used as a criterion of malignancy. As a carcinoma does not heal, if an x-ray repeated in two to four weeks shows decrease in the size of an ulcer crater and of the surrounding induration it is the surest evidence that the ulcer is benign. At times the crater of a malignant ulcer may be partially filled up by carcinoma tissue, but the surrounding area will show that operation is indicated at once. Routine fluoroscopy to rule out gastric cancer should be condemned, as even large carcinomas can easily be overlooked when no films have been made.

DR. MARIE ORTMAYER, Chicago: I should like to present a case with slides which demonstrates a very uncommon inflammatory gastric lesion in the hope that others may have seen similar lesions and will throw some light on the etiology. A man about 50 years old complained of mild to severe epigastric pain coming on immediately after meals and lasting from fifteen to sixty minutes. He occasionally vomited small amounts of material with relief to the distress. This had been present only two weeks before I saw him, but a weight loss of 25 pounds (10 Kg.) had extended over the previous three months. The physical examination was negative except for the weight loss, negative Kahn reaction, blood count normal and traces of blood in the stool. The Ewald test showed no free hydrochloride acid; an eighteen hour retention of eggnog was present, and Oppler-Boas bacilli and lactic acid were found in repeated gastric aspirations. The gastric x-ray examination showed some nonpersistent antral spasm with what the roentgenologist thought to be a shortening of the lesser curvature but without definite decision as to the etiology underlying the changes. Gastroscopy revealed an atrophic gastritis in the higher parts of the stomach and, surprisingly, a very large, shallow erosion on the antral lesser curvature and walls extending well above the angulus. The clinical diagnosis was gastric carcinoma, and resection was done. The resected specimen showed in the middle, straddling the lesser curvature, a 4 by 5 centimeter very shallow ulcer, with irregular edges, and surface covered by thin flakes of fibrin. The ulceration was barely perceptible and toward the cardiac end seemed to merge into the surrounding mucosa. The stomach wall at the pylorus measured 1 cm. in width, becoming thinner in the region of the ulceration. Section through the ulcer showed a fibrinopurulent membrane adhering to the ulcer base. There was an extensive infiltrative process extending through to the muscularis mucosae, which consisted of plasma cells, eosinophils and capillaries with some remnants of gastric glands. There was a large formation of capillaries near the submucosa, and all through the mucosa were occasional remnants of glands left in that section. There was a dense infiltration of perivascular, perilymphatic and perineural cells. There was no endarteritis. In the deeper layers eosinophils were prominent but plasma cells predominated. Formation of new capillaries was striking. Special stains showed no spirochetes and no bacteria of acid fast or other recognizable infection. The diagnosis was subacute to chronic erosive gastritis of undetermined etiology.

DR. HENRY A. RAFSKY, New York: The microscopic examination of the pathologic specimen is the only reliable criterion in distinguishing benign and malignant lesions of the stomach. If there is any doubt as to whether we are dealing with a benign or a malignant lesion, surgery is the only method of treatment. The x-ray evidence of healing may be misleading. I used a gastroscope on a man aged 27 with a suspected cancer. The x-rays showed a disappearance of the niche after medical treatment. Four months later a cancer was found at operation. I do not think that an ambulatory form of treatment is adequate ulcer therapy. What to do when the ulcer patient is back on our hands, if surgery fails, is a difficult problem. Should the gastrojejunal ulcer or the repeated hemorrhages be treated with further surgery or should the patient be treated medically? I have devised a method of treating these patients by inserting a tube through the stoma and splinting the stoma and giving the diseased area complete rest. A patient developed a large marginal ulcer nine months after a gastroenterostomy. An Einhorn tube was introduced through the stoma. In three weeks the niche had entirely disappeared. Another patient developed a large jejunal ulcer over twenty years after a gastroenterostomy. The tube was passed through the stoma, and the ulcer has entirely healed. The third patient had undergone a subtotal gastrectomy. He suffered from repeated hemorrhages. During the last severe bleeding episode his hemoglobin fell to 15 per cent and his red blood cells to 900,000. The x-rays did not reveal the lesion, but gastroscopy did. The patient was subsequently treated in a similar manner as the others. In the diagnosis of these cases gastroscopy should supplement the x-ray examination, because at times the latter may detect the lesion and in other cases endoscopy may be the only method of making the diagnosis.

DR. SARA M. JORDAN, Boston: I disagree with Dr. Andresen in the matter of treatment. We can't get an ulcer free of symptoms, even, much less heal it, without using both antispasm and neutralizing forms of treatment. We therefore would agree most heartily with Dr. Aaron that that is an essential part of treatment. Seeing as we do so many of the most distressing complications of ulcer, I believe that it is most important that we detect the ulcer early and treat it intensively at that early stage, so that the complications such as those Dr. Lahey described around the common duct will not occur. I should like to add another point which has been helpful in the diagnosis of the ulcer of the second part of the duodenum, the ulcer that has a tendency to involve later the common duct: it is often difficult to diagnose that ulcer. I am quite certain that we miss a great many of them and that we have x-rayed a patient and said he has no ulcer when actually the ulcer has

been located in that part of the duodenum and very difficult to visualize. Dr. Wilkinson made an interesting observation on that point. He feels that if the duodenum is narrowed in the second portion and dilated beyond that point we should strongly suspect that there is an ulcer there, even though there is no crater. I should like to stress the fact that both medical management patients and the patients whom we see after surgery should not only be thoroughly treated in all other respects but also thoroughly educated. Consider the different factors in the precipitation of ulcer. Here are a group of controllable factors: food, alcohol, routine rest, routine exercise and smoking. On the other side are the more or less uncontrollable factors, the psychogenic factors. If the uncontrollable factors overbalance the picture by the addition of one of the controllable factors, we have a recurrence; if, on the contrary, the patient uses care in the controllable factors and, of course, that care can be 100 per cent perfect, because it is controllable, the psychogenic factors are likely to be overbalanced by the protective ones.

DR. FRANK H. LAHEY, Boston: Ideally, all patients with ulcers should go into the hands of the gastroenterologists first, in the complicated and intractable cases surgeons would be called in consultation promptly, and when these patients had recovered from their operation they would go back to the gastroenterologists' hands for postoperative care and follow-up. Surgeons are so busy and occupied that they frequently have neither the time nor the inclination to give these patients the preoperative and postoperative management they often need. Unless the surgeon who is constantly operating on patients with peptic ulcers is getting the bad ulcers to do, the kind which are indurated and eroding on the posterior wall, these patients are not infrequently receiving surgical treatment before they need it. The ulcers that should come to surgery particularly are the eroding, indurated and scarred ulcers. Most of the simpler ulcers can be handled satisfactorily under medical management. As Dr. Aaron has mentioned, there is a great opportunity for the gastroenterologist and for the life insurance companies to do educational work in the earlier recognition and treatment of these patients in the preulcer stage. In a majority of patients with ulcer there has been plenty of warning of the impending ulcer in the form of hyperacidity, pylorospasm and hunger pain. Unfortunately, people like to eat, drink, smoke and indulge themselves generally so much when it comes to their gastric apparatus that they are as a rule unwilling to modify these habits until they are faced with a real catastrophe in the form of hemorrhage, pyloric obstruction, perforation or threatened malignant degeneration in a gastric ulcer.

Brief History of Psychiatry.—Farrar, together with others, divides the history of psychiatry into four periods: the first, or primitive, dates from ancient times and ends with Pythagoras; the second, or Golden Age, begins with the greatest of the Asclepiadae, Hippocrates, and ends with Galen; the third, or period of darkness, which he attributes entirely to the influence of the Church, he extends into the eighteenth century, long after the Renaissance freed the mind of man in art and science; the fourth, or modern period, is only of yesterday. In my opinion the history of the mind, to which psychiatry properly belongs, does not permit of such epochal, horizontal stratification. One may adhere to convenient division into periods only if one is constantly aware of the slight influence a few centuries have on the actual progress of the human mind. Man is still primitive in many of his ways, and a touch of madness still makes the whole world kin. The human animal persists in thinking in terms of religion, magic and prayer in matters of health and social organization. Psychotherapy still bears the imprint of primitive thought, and the modern cultist is the twin brother of the old medicine man. Despite the great progress which psychiatry has made, it is considerably more of an art than a science, while the armchair psychologist is only now being banished. The growth of this, perhaps the most important, branch of medicine has been painfully slow, retarded alike by scholasticism and metaphysics, but mainly by the primitiveness of man's emotions and the rigidity of human thought.—Wechsler, I. S.: The Neurologist's Point of View, New York, L. B. Fischer, 1945.

THE POSSIBLE ROLE OF WHOLE BLOOD TRANSFUSIONS IN MILITARY MEDICINE

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There has been a steady increase in the use of transfusions of whole blood in civilian medicine since the introduction of sodium citrate as an anticoagulant in 1914. The procedure has become commonplace in most well equipped hospitals in the United States. The development of blood banks has still further stimulated this practice by rendering blood readily available in emergencies and by making the operation more convenient than has hitherto been possible. From this extensive clinical experience certain observations have been abundantly confirmed. Patients with chronic anemia from almost any cause improve subjectively and objectively after transfusion. They withstand major surgical procedures better when the anemia has been previously corrected by the administration of blood. Some types of infections are better combated with the aid of blood from healthy persons. But the most spectacular result is seen in shock from severe hemorrhage. Here the transfusion of blood is frequently life saving. The restoration of the lost circulating volume with whole blood is logical in theory and has proved efficacious in practice. These facts have become well known and have been accepted as the basis for sound therapy.

In 1938 and the years following, attention was directed to the therapeutic possibilities of transfusions of plasma and serum by the pioneer work of Mahoney, of Elliott, of Strumia, of Levinson and of many others. Large quantities of human plasma became available for clinical use, first as a by-product of outdated stored blood, later to be prepared for the specific purpose. It was shown that transfusions of plasma were effective in the treatment of hypoproteinemia, whether from metabolic disturbances or from chronic infections. Plasma could logically be employed in immunotherapy. The greatest interest centered, however, in the demonstration that transfusions of plasma were effective in the treatment of secondary shock.

Much confusion arose from the conflicting theories concerning the causation of secondary shock and the methods proposed for treating it. It was agreed that the restoration of the circulating blood volume was the sine qua non. Previously it had been demonstrated that this could be accomplished by the administration of whole blood. But many now assumed that the beneficial effect of whole blood transfusions in shock resulted entirely from the plasma components and that the erythrocytes were unnecessary. This conclusion seemed to be confirmed by experiments on animals and by observations made on patients. It was pointed out that the administration of plasma possessed advantages over whole blood in the greater stability of plasma or serum during storage and in the fact that tests for compatibility were unnecessary before transfusion. Some seemed to regard the erythrocytes as merely an unstable and dangerous element. Carrying this attitude to a *reductio ad absurdum*, one might conclude that nature

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had made an extravagant error in elaborating mechanisms which so carefully control the number of cells in the circulation.

Almost coincidental with the introduction of plasma and serum transfusions came the military necessity for the treatment of secondary shock on a huge scale. Our allies the British and the Russians have had nearly five years of war and we have had two and one-half in which to acquire clinical experience in bombed cities and on the battlefield. Many experimental studies have been performed. The opportunity has been presented for comparing methods of therapy. With such a wealth of clinical material it was soon evident that methods which were efficacious in civilian medicine were not necessarily applicable in warfare. Realization soon came that most of the patients seen in civil practice are in mild or moderate degrees of shock because treatment can usually be instituted promptly. In military medicine, on the other hand, the degree of shock is frequently much greater because of the longer time elapsing before treatment can be given. Failure to recognize this difference probably accounts for the early conclusions that all patients with hemorrhagic shock could be treated exclusively with transfusions of plasma or serum.

It is becoming clear that there are several clinically distinct types of secondary shock, in each of which the circulating blood volume is diminished. In shock from burns or crushing injuries concentration of the blood may occur. There is no hemoconcentration in shock associated with hemorrhage. When no loss of red cells has occurred, the circulating volume should be restored by transfusions of plasma or serum. In shock associated with hemorrhage restitution of the blood volume with plasma or serum is an effective and frequently life saving measure. If the blood loss has been great, however, there is a strong tendency for relapse to occur when plasma or serum has been employed exclusively, whereas relapses are not so frequent when whole blood has been administered. In the treatment of casualties from air raids early in the war the British concluded that 1 pint of blood should be given for every 2 pints of plasma or serum when hemorrhage is severe. This observation was subsequently confirmed in the American forces.

Some perspective on the indications for whole blood transfusions may be gained from the experience of civilian medicine. The University Hospitals of the State University of Iowa constitute a general hospital of approximately 800 beds where patients with most of the common diseases are treated. The operation of a blood bank has made available both whole blood and plasma in quantity. Either is readily obtained in sufficient volume with a minimum of delay. Compatibility tests for whole blood are quickly and accurately performed, so that delay or fear of reactions does not prejudice the choice between whole blood and plasma. In the year from March 1943 to March 1944, 3,618 transfusions were administered, of which 3,358 were of whole blood and 260 were of plasma. In this situation, in which only the indications for whole blood and plasma were considered and availability was not a factor in the choice, 92.8 per cent of the transfusions were given with whole blood and only 7.1 per cent were made with plasma. A majority of the transfusions were given to surgical patients. Transfusions of whole blood were employed chiefly for the correction of chronic anemia, for the preoperative preparation of anemic patients or in the treatment of hemorrhagic shock. Plasma was used for the treatment of shock from burns and for the correction of hypoproteinemia.

From this experience it is possible to predict the indications for whole blood and plasma transfusions in an active military installation where both are available in sufficient quantities. A far larger proportion of patients will be undergoing major surgical procedures, and the incidence of secondary shock will be much greater than in civil practice. We are told that in military medicine over 90 per cent of the cases of secondary shock are caused by hemorrhage. This is preferably treated by transfusions of whole blood, but plasma may be given successfully in all but the more severe cases. In the correction of preoperative anemia whole blood is indispensable. Transfusions of plasma or serum are indicated in burns, although patients with severe burns frequently develop anemia requiring whole blood transfusions after the stage of shock has been passed. If poison gas should be used in this war, a still greater demand for whole blood transfusions may arise.

But so far we have dealt with ideal situations and frequently in warfare there are many practical limitations to be faced. Consideration must be given to complicated problems of equipment and supply. The ease of administration and the stability of blood plasma and human serum albumin are now well known. These products may be prepared in the home country in vast quantities on a production schedule. They will remain stable for years at the temperature of the natural environment. They may be administered with simple equipment in a foxhole, an ambulance, a ship or an airplane without preliminary tests for compatibility. These features make them preferable for the treatment of secondary shock in many military situations. It is frequently not a question of whether to employ whole blood or plasma transfusions but of plasma or nothing.

The transfusion of fresh whole blood is not practical in many military situations. The time required for collection of blood often coincides with that when the medical personnel is most occupied in the surgical procedures demanded in emergencies. Lack of laboratory personnel and equipment may make difficult or preclude entirely the use of fresh blood. Lastly, the procurement of blood donors not only may be time consuming but may actually be limited by the circumstances. The medical personnel soon becomes "bled out," the walking wounded may not be amenable, convalescents may not be available, the ship's company may be otherwise occupied.

Employment of three procedures has made possible the application of whole blood transfusions in military medicine: (1) the accumulation of large stores of preserved blood, (2) the transportation of preserved blood and (3) the administration of group O blood to recipients belonging to any of the four blood groups.

Any one who has worked in a civilian hospital where a blood bank is established has realized the advantages of having a large supply of whole blood instantly available for the patient who develops shock from extensive hemorrhage. One, 2, or even 5 liters of blood of the proper group, previously tested by the Wassermann reaction, may be poured into the patient's veins. There is no wait while one or ten donors of the proper blood group are sought, no delay while the blood is collected. Under such conditions the potentialities for time saving and life saving are impressive in even a single case.

These advantages may be multiplied many times when a store of preserved blood is available in an advanced medical establishment where surgical operations are being performed on severely wounded men by limited personnel.

Transportation of preserved blood is limited only by the distance which can be attained by air transport in the maximum time of preservation of the blood. It is possible to preserve blood suitable for transfusion up to thirty days by some methods. In actual military practice, blood was shipped from England for use in the battle of Dunkirk. Blood was transported by airplane from Cairo and used in the battle of El Alamein. From Cairo blood followed the British Eighth Army across the desert as far as Tunis. Transfusions were given in New Guinea with blood shipped from Australia. Donors in Moscow and other cities of the Soviet Republics have given blood which was administered to Russian soldiers at the front.[1]

Since the principle of the "universal donor" was first proposed by Ottenberg in 1911, considerable controversy has been aroused about the safety of such a procedure. It is probably true that rarely a blood belonging to group O is encountered with agglutinins of such potency as to cause reactions in a recipient of heterologous group. This point is still debated. It is a fact, however, that thousands of transfusions of group O blood have been given to recipients of other groups in civil practice and in the various armies engaged in this war without an alarming incidence of untoward reactions. The advantages of such a procedure in military medicine are immense. The group of the blood can be carefully determined at the point of collection, where well trained technicians can perform the tests. At the point of administration the universal blood may then be employed as indiscriminately as plasma, without the delay, equipment or personnel required for laboratory tests. If the time saving feature of this procedure is ignored, it is still safer than to entrust the performance of compatibility tests to technicians of doubtful skill working under the pressure of urgency which frequently surrounds the transfusions of blood in emergencies.

In addition to the problems encountered in supplying plasma to medical installations, the military organization faces certain additional problems in handling preserved blood. Collecting depots must be esablished far enough in the rear to insure an adequate supply of donors. Facilities for accurate blood grouping must be located at the points of collection. Refrigeration must be provided at collecting depots, during transportation and at dispersal points. Accurately timed and frequent transportation facilities between collecting depots and dispersal points must be maintained with the necessary communications for activating them. These are not insurmountable problems for a military organization. They have been solved in the British and Russian armies and they are now being solved in the American army.

It is therefore possible to employ preserved blood of group O in the same manner as plasma, administering it in foxholes, on ambulances, aboard ship and in airplanes.

1. Since this article was written, the Army of the United States has established a blood transfusion service whereby preserved blood of group O is collected in the eastern part of the United States and shipped daily by airplane to the European theater of operations. The U. S. Navy now operates a transfusion service under which preserved universal blood is collected on the West Coast of the United States and shipped by airplane to the Pacific Ocean area.

THE MEDICAL OFFICER RETURNS TO CIVILIAN PRACTICE

LIEUTENANT COLONEL HAROLD C. LUETH
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Concern has been expressed about the number of men who will seek licenses to practice medicine after the war. Since this is a matter of real importance to the medical profession, the Committee on Postwar Medical Service wished to obtain reliable information about the number of men who would like to resume their former practice of medicine, the number of men who would like to begin a practice of medicine after the war in a community other than the one they left, and the number of men who for the first time would like to establish a practice of medicine in a community.

TABLE 1.—*Number of Medical Officers in Each Graduation Group and Percentage of Total*

Group No.	Dates of Graduation	Number of Medical Officers' Questionnaires Studied	Percentage of Total Questionnaires Studied
1	1941-1943	4,393	20.9
2	1938-1940	4,205	20.0
3	1933-1937	3,762	17.8
4	1930-1934	4,724	22.5
5	1920-1929	3,320	15.8
6	Before 1920	625	3.0
Total		21,029	100.0

TABLE 2.—*Number of Medical Officers with Licenses and Without Licenses by Graduation Group and Length of Service with the Armed Forces*

Graduation Group Number	Licensed	Not Licensed: Years of Service with Armed Forces 1	2	3	4	More Than 4	Total	No Indication as to Licensure	Total
1	3,282	736	317	32	1	..	1,106	5	4,393
2	3,870	28	123	124	32	24	331	4	4,205
3	3,713	..	19	12	3	10	44	5	3,762
4	4,676	1	11	8	1	16	37	11	4,724
5	3,277	1	6	4	..	26	37	6	3,320
6	573	..	2	1	..	32	35	17	625
Total	19,391	766	478	201	37	108	1,560	48	21,029

A study of 21,029 questionnaires returned from medical officers on duty with the Army, Navy, Public Health Service and Veterans Administration provided information concerning problems that probably will face the various state licensing boards in the future.[1] The Committee on Postwar Medical Service in cooperation with the Surgeons General of the Army, Navy and Public Health Service authorized the distribution of questionnaires to each medical officer on duty with the armed services. The Surgeons General assisted greatly in the addressing and distribution of the questionnaires, for which service the committee is most grateful. Relatively few requests were made to the committee for additional questionnaires, and personal inquiries by various members of the committee to medical officers on duty indicated that there was a nearly complete distribution of questionnaires. Their ability to provide so extensive a coverage of members of their corps during

Read before the Federation of State Medical Boards of the United States, Chicago, Feb. 13, 1945.

1. Lueth, H. C.: Postgraduate Wishes of Medical Officers: Final Report on 21,029 Questionnaires, J. A. M. A. 127:759 (March 31) 1945.

active warfare and amid the frequent changes of station reflects credit on the Surgeons General. The 21,029 questionnaires studied represent about 35 per cent of all medical officers on duty.

The questionnaires were divided into six groups on the basis of date of graduation from medical school. There were about the same number of men in the first five groups (table 1). Group 6, or graduates before 1920, formed a very small number. A comparison of the number of returned questionnaires with the actual number of medical officers on duty with the different branches of the armed forces indicated that the present study was a representative sample of the group.

A study of medical officers as to licensure by graduation groups and by length of service in the armed forces was made (table 2). Ninety-two per cent of all officers, or 19,391, had licenses to practice medicine, and 1,590 medical officers did not possess a license to practice (chart 1). Only 48 men failed to answer this part of the questionnaires.

The group of 1,590 medical officers who did not have licenses was studied separately. About 70 per cent, or 1,106, were graduates of group 1. They had

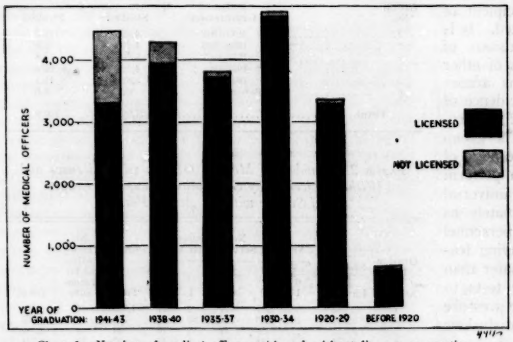

Chart 1.—Number of medical officers with and without licenses to practice.

served the following length of time with the services: 736 for one year, 317 for two years, 52 for three years and 1 for four years. It is probable that this group is of major concern to the licensing boards, since they are likely to be the men who will return from military service and seek a license in order that they may establish themselves in the civilian practice of medicine.

There were 331 group 2 graduates who did not have a license, or 21 per cent of all the unlicensed medical officers studied. Most of the group 2 unlicensed medical officers had served for some time; there were about 85 per cent who had served for two or more years. Specifically, there were 28 who had served one year, 123 who had served two years, 124 who had served three years, 32 who had served four years and 24 who had served for more than four years. Nearly all the men in this group left internships and residencies and went directly to the armed services. It is believed that many of the men in this group will seek a license to practice medicine soon after release from military service so as to enable them to engage in civilian medical practice. It should be mentioned that a certain number of men without licenses will probably remain in government service; consequently they will not need licenses to practice. Also there were a small number of officers of the Regular Medical Corps in these groups, who very likely will not seek licenses in the future.

Men who graduated before 1937 and who did not possess a license were relatively few. There were 44 group 3 graduates, 37 group 4 graduates, 37 group 5 graduates and 35 group 6 graduates, or a total of 153. It is significant that more than half of this total number of officers, or 84 medical officers, had served for more than four years. Very few reserve medical officers had more than four years' service at the time the questionnaires were filled in. Nearly all the group (84) with more than four years' service were from the regular medical corps of the services. A majority of regular Army, Navy, Public Health Service and Veterans Administration officers presumably intend to remain with the services after the war, so that there need be little concern about their future licensure.

Medical officers from groups 3, 4, 5 and 6 who did not have licenses but who served less than four years formed a distinct group (69). It was quite likely that a majority of them were formerly engaged in some type of work that did not require a license to practice medicine, such as teaching, research, hospital administration and public health. They should not offer any serious problem as to licensure in the future.

It was concluded that graduates of groups 1 and 2 were of future interest to the state licensing boards. There were 1,437 medical officers in both groups, or 6.8 per cent of the entire group studied, and some of the group would remain in government service, some select types of practice that would not require a license (teaching, research, hospital administration and so on) and some were already in the regular Medical Corps of the federal services, so that they would not seek a license in the future.

SIZE OF COMMUNITY OF FORMER MEDICAL PRACTICE

The size of community of former medical practice of medical officers was studied. A little more than half the men (12,508) indicated the size of community in which they were engaged in practice before they entered military service. The remainder did not answer the question or were not in practice. Most of the men came from large cities. There were 4,943, or 39 per cent, of those who mentioned the size of community of previous practice who came from cities of more than 250,000 population. About 32 per cent, or 4,026 medical officers, came from cities of 25,000 to 250,000, and about 23 per cent, or 2,836 medical officers, came from communities of 2,500 to 25,000 population. Less than 6 per cent, or 703 medical officers, came from communities of less than 2,500 population.

Medical officers who were formerly in civilian practice came from different sized communities in about the same ratios from each graduation group, except group 1. The small number of replies from group 1 precluded further analysis of the group. Cities of 25,000 to 250,000 uniformly attracted 32 per cent of doctors from all graduation groups. Smaller communities seemed to have relatively more younger graduates and fewer older graduates. For example, there were 28 per cent of group 2 graduates, 24 per cent of groups 3 and 4 graduates, 19 per cent of group 5 graduates and 18

per cent of group 6 graduates who came from practice in cities of 2,500 to 25,000 population. A similar variation from 9 per cent of group 2 graduates to 4 per cent of group 6 graduates was observed in the men who formerly practiced in communities of 2,500 or fewer persons. An increasingly large proportion of older graduates were found to have come from the largest cities. There were 31 per cent of group 2 graduates from cities of 250,000 or more population, 37 per cent of group 3 graduates, 40 per cent of group 4 graduates, 46 per cent of group 5 graduates and 46 per cent of group 6 graduates.

FUTURE COMMUNITY MEDICAL PRACTICE OF RETURNING MEDICAL OFFICERS

There were 20,497 medical officers who indicated their desires as to future medical practice (table 3). Forty-seven per cent, or 9,649 men, signified that they desired to reengage in practice in the previous locality of practice (chart 2).

A large group of medical officers, 10,848, either did not desire to reengage in practice in their previous locality or did not answer that part of the questionnaire. They were mainly younger graduates, since there were 4,237 from group 1, 3,160 from group 2, 1,517 from group 3, 1,172 from group 4, 632 from group 5 and 130 from group 6. While these numbers seem large, it should be pointed out that there was uncertainty in the minds of many men.

The large number of medical officers who indicated that they would establish a civilian practice of medicine in a community other than the one they left to enter military service may at first seem startling. It should be remembered, however, that under normal conditions there are a certain number of civilian physicians who move from one community to another. A study of physicians who moved from one city to another during the period May 1, 1940 to April 15, 1941 showed that 19,359 physicians changed their locations of civilian medical practice. There were about 176,000 physicians in the United States in the same year, or about 1 doctor in 9 that moved from one city to another. Recent graduates from medical schools who have just established a practice after the completion of their internships, physicians removing from one building to another within the same city, or physicians who have died were not included in the previous figures.

An estimate of the normal number of changes in location of medical practice of the civilian physicians now in the Army was made. It was assumed that, in spite of the war, 1 medical officer out of 9 who served in the Army, except officers of the Regular Corps, would normally seek a new community in which to practice. There were 532 Regular Corps medical officers who returned their questionnaires in the present study. On this basis it is estimated that about 2,275 physicians among the group studied would normally have changed their practice of medicine from one city to another even if there had been no war. As there were 2,469 medical officers who indicated that they would not practice medicine in their former locality but would seek a new community in which to practice after they left the military service, it was concluded that they represented about the anticipated changes in normal migration of doctors.

Relatively few medical officers, about 9 per cent of all medical officers in this study, actually had a definite preference as to a new locality in which to practice medicine. There were 67 group 1 graduates, 362 group 2 graduates, 555 group 3 graduates, 537 group 4 graduates, 280 group 5 graduates and 40 group 6 graduates who actually named a state and/or city in which they would like to practice.

There were 628 medical officers who did not plan to return to their former localities of medical practice but who failed to mention a community in which they would like to resume civilian medical practice.

Of the small number of medical officers (67) that were group 1 graduates who named a state in which they would like to practice, 9 mentioned California, 8 Illinois, 6 Washington, 5 Georgia, 4 Texas and New York, and the remainder many other states. Most of the men indicated that they would prefer communities of 25,000 to 250,000. There were 11 who selected cities of more than 250,000 population, 31 who selected cities of 25,000 to 250,000 population, 22 who selected cities of 2,500 to 25,000 and only 1 a community of less than 2,500 population.

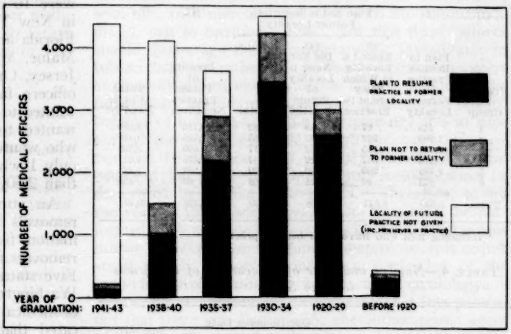

Chart 2.—Desires as to place of future practice.

A total of 362 group 2 graduates marked their preference for future medical practice. They represented 11 per cent of all men who did not wish to reengage in civilian medical practice in the community they left to enter military service. Questionnaires revealed that 62 wanted to practice in California, 30 in New York, 26 in Washington, 23 in Texas, 16 in Pennsylvania and Wisconsin, 15 in Illinois, 13 in Florida, 11 in Minnesota, and some from every other state except Rhode Island.

There were 51 men (14 per cent) who wanted to practice in cities of more than 250,000 population, 177 men (49 per cent) who wanted cities of 25,000 to 250,000 population, 89 men (34 per cent) who wanted cities of 2,500 to 25,000 and 10 men (3 per cent) who wanted communities of less than 2,500 population.

The largest group of medical officers (555) who specified the state and size of community in which they desired to practice in the future came from graduation group 3. There were more than 36 per cent of medical officers who expressed a desire to seek a new community in which to practice medicine after leaving the military service rather than to return to their former location of practice. California was preferred by nearly twice as many men (114) as any other group. Other states

that were selected were, in order of frequency and number of requests, New York 67, Texas and Washington 26, Pennsylvania 25, Florida 22, Michigan 20, Illinois 18, Arizona, Indiana and Wisconsin 17 and New Jersey and Ohio 16, Oregon and Virginia 13 and Colorado 12. Most of the questionnaires showed that medical officers favored larger cities. There were 100 men, or 18 per cent, who wanted to practice in cities of more than 250,000 population, 272 men, or 49 per cent, wanted cities of 25,000 to 250,000 population, 123 men, or 22 per cent, wanted cities of 2,500 to 25,000 population and 3, or 1 per cent, wanted communities of less than 2,500 population. About 10 per cent (57) of the group failed to indicate a choice of the size of city of future practice.

A group of 537 medical officers, or 46 per cent of those from graduation group 4 who showed that they would like to practice medicine in different communities than they left for military service, actually designated a definite community. The largest number chose California, or 132 men, and New York by about half that number, 68 men. Other requests came from 35 for Texas, 24 for Pennsylvania, 21 for Washington, 20 for Michigan, 18 for Ohio, 17 for Colorado, 15 for Illinois and 14 for Oregon and Wisconsin. All other states except Mississippi, Nebraska, North Dakota, Rhode Island, South Dakota and Wyoming were requested as possible locations for future practice. Cities of 2,500 to 25,000 population were the favorite choice of medical officers for future locations of medical practice. There were about 18 per cent, or 96 men, who wanted to practice in cities of more than 250,000, about 49 per cent, or 263 men, who wanted to practice in cities of 25,000 to 250,000, about 19 per cent, or 101 men, who wanted to practice in cities of 2,500 to 25,000 and about 1 per cent, or 4 men, who wanted to practice in communities of less than 2,500 population.

TABLE 3.—*Number of Medical Officers by Graduation Groups Who Plan to Resume Practice in Their Former Localities, Who Plan to Resume Practice in New Communities and Who Give No Indication of Locality of Future Practice*

(1)	(2)	Plan Not to Return to Former Locality			(6)	
		(3)	(4)	(5)		
Graduation Group	Plan to Resume Practice in Former Locality	Named a Locality in Which They Intend to Practice	Did Not Name a Locality of Future Practice	Total	Locality of Future Practice Not Given	Total (Col. 2, 5 and 6)*
1	149	67	15	82	4,155	4,386
2	1,009	362	93	455	2,705	4,169
3	2,191	555	162	717	800	3,708
4	3,445	537	210	747	425	4,617
5	2,589	280	120	400	232	3,221
6	275	40	28	68	62	405
Total	9,649	1,841	628	2,469	8,379	20,497

* Including men who have never been in practice.

TABLE 4.—*Number and Rate of Relocations of Physicians to New States*

	Questionnaire Data		1940-1941:
	Number of Removals	Removals per Thousand	Removals per Thousand
California	407	226	57
Illinois	64	36	42
New York	202	112	114
Texas	99	55	33
Washington	92	51	11

About 45 per cent of the medical officers from group 5 graduates (280) who did not care to reengage in practice in their former communities after the war indicated a definite place at which they would like to practice medicine after they left military service. About a third of them, or 90, wanted to practice in California. Other states were selected by the following number of men: New York 30, Washington 13, Texas 11, Oregon 10, Arizona, Colorado, Massachusetts and Pennsylvania each 9, Illinois 8, New Jersey 7 and North Carolina, Ohio and Wisconsin each 6. Again, a majority of men favored medium sized cities. There were 46 men, or 17 per cent, who indicated that they preferred cities of more than 250,000, 141 men, or 50 per cent, preferred cities of 25,000 to 250,000, 44 men, or 16 per cent, preferred cities of 2,500 to 25,000 and 3 men, or 1 per cent, who preferred communities of less than 2,500 population.

About one third of all medical officers in graduation group 6 (130) signified that they would not resume practice in their former locality. Of this number about one third, or 40 medical officers, expressed definite ideas concerning their new location of practice. There were 16 men who wanted to practice in California, 4 in New York, 3 in Illinois, 2 each in Connecticut and Florida and 1 in Colorado, Georgia, Idaho, Kentucky, Maine, Michigan, Minnesota, Nebraska, Nevada, New Jersey, Oregon, Texas and Wisconsin. Older medical officers favored larger cities, as there were 10 who wanted to practice in cities of 250,000 or more, 17 who wanted to practice in cities of 25,000 to 250,000, 7 who wanted to practice in cities of 2,500 to 25,000 and only 1 who wanted to practice in a community of less than 2,500.

An attempt was made to compare the number of removals in a few selected states as shown by the information from the questionnaires with the number of removals in the same states before the war (table 4). Five states, California, Illinois, New York, Texas and Washington, were chosen for the study. The number of medical officers, except group 6 graduates, who indicated that they would not resume practice in their former localities but who suggested new communities, was known. Graduates of group 6 were excluded, since they were men more than 55 years of age and all other data on removals was determined for men under 56 years of age. From the questionnaires 1,801 medical officers (except group 6 graduates) mentioned specific states in which they intended to establish a practice instead of their former locations of practice. A comparison of the number of men who wanted to relocate in the five states with the total relocations was made. Removals per thousand medical officers who desired relocation were 226 to California, 36 to Illinois, 112 to New York, 55 to Texas and 51 to Washington. In an earlier study of removals of physicians under 56 years of age during May 1, 1940 to April 15, 1941 the following removal rates per thousand physicians who relocated was determined. They included California 57, Illinois 42, New York 114, Texas 33 and Washington 11. It appears that medical officers want to relocate in California and Washington in about four times the normal numbers, in Texas about half again as many as normally, and in Illinois and New York in about the normal numbers.

There were 8,379 men who did not indicate a locality of future practice and who likewise left unanswered the questions of whether or not they intended to resume practice in a former locality. They were largely young

officers, as there were 4,155 who had graduated in 1941-1943 and 2,705 men who had graduated in 1938-1940. Most of these men had never been in practice but came directly from hospital training to military duty. In an earlier study (1) it was shown that 4,640 men came directly from internship to the armed services and 2,191 men came directly from residency. It appears that more than 80 per cent of the medical officers who did not indicate a locality of future practice were men who had never been in practice but who came directly from internships or residencies to the armed forces. The remainder were men from older graduation groups who were probably uncertain as to their future location of practice. They included 800 men from group 3 graduates, 425 men from group 4 graduates, 232 from group 5 graduates and 62 from group 6 graduates.

From the questionnaires it appears that half of the men who have a definite community selected for future practice chose cities of 25,000 to 250,000 population. Cities of more than 250,000 population seemed to attract about 17 per cent of medical officers who sought new locations and cities of 2,500 to 25,000 population about 20 per cent. Communities of 2,500 or less were chosen by about 1 per cent of medical officers. Younger medical officers seemed, however, to be attracted in larger numbers to communities of 25,000 population or less than older medical officers.

CONCLUSIONS

1. A study was made of 21,029 questionnaires returned by medical officers on duty with the armed forces.

2. Ninety-two per cent of all officers had a license to practice medicine.

3. There were 1,590 medical officers who did not have licenses. About 70 per cent of the officers without a license had graduated from medical school between 1941 and 1943. More than 20 per cent of unlicensed men were graduates of 1938-1940, and the remainder were graduated earlier. Many of the older medical graduates were formerly engaged in work that did not require a license and would be likely to return to their former activities after the war.

4. There were 12,508 medical officers who indicated the size of community in which they were engaged in practice before the war. About 39 per cent came from cities of more than 250,000, nearly 32 per cent from cities of 25,000 to 250,000, almost 23 per cent from cities of 2,500 to 25,000 and less than 6 per cent from communities of less than 2,500 population.

5. The ratio of medical officers that came from a given sized city to the total number of officers in the graduation group was about the same for all graduation groups. Smaller communities seemed, however, to have attracted a few more younger graduates and larger cities a few more older graduates.

6. Forty-seven per cent, or 9,649 medical officers, indicated that they wished to return to practice in the former community after the war.

7. More than 21 per cent, or 4,310 medical officers, signified that they did not intend to reengage in practice in their former communities. Less than half of the group, or 1,841, gave a definite locality in which they would like to practice after the war. The rest merely left the question as to location of practice unanswered.

8. There were 8,379 medical officers who gave no answer as to where they would like to practice. More than four fifths of them were graduates of groups 1 and 2 and consequently had probably never had an established practice of medicine.

THE USE OF DIASONE FOR THE TREATMENT OF TUBERCULOSIS

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Without becoming facetious, one could say from past evidence that tuberculosis has been the major mummer among diseases. Those who have been deceived in the past by the vagaries of this disease include such names as Brehmer by the cause of tuberculosis, Koch by tuberculin action, Virchow by the microbic origin, Behring by the source of infection, Krause by the significance of the tuberculin inflammatory reaction, and so on. The scientific investigator should be wary of the vagaries of the tubercle bacillus and tuberculosis by this time and inquire into the "whys and wherefores" of the mechanism involved before accepting mere appearances as bona fide evidence of practical actualities. In chemotherapy particularly history has recorded numerous faux pas of premature overoptimism with tuberculin, with copper, with gold, with cinnamates, with oils, with mercury, and now with the sulfonamide drugs, just to mention a few. Not that these failures should discourage the chemotherapeutic investigator in tuberculosis, but rather that he should become an expert at cautious and careful evaluation before submitting the tuberculous invalid to useless and unnecessary hazard because of his own scientific shortcomings and in support of the unjust plea that not all necessary information can be obtained from properly performed animal tests and that spontaneous human tuberculosis cannot be duplicated by animal experiments. Therefore, to fill the void of this inadequacy, human tests must be performed. To any one conversant with both spontaneous human and experimental animal tuberculosis, this unjust stand merely impresses one as a confession of the individual investigator's limitations in tuberculology.

In 1940 in a review of chemotherapy [1] it was pointed out that there was "no specific chemotherapeutic agent of proved value in tuberculosis" and that "in the evaluation and planning for chemotherapeutic determinations in tuberculosis, theories drawn from chemical in vitro actions with nonviable bacilli are not likely to lead to conclusions in vivo. Vital biological reactions and approach appear to be the right road for this purpose. Distortional organotoxic effects of chemotherapeutic agents must also be evaluated properly to avoid deductions drawn from anatomic tuberculosis alone. In vitro culture cidal and static tests cannot be translated directly into in vivo terms. The solution, as in medicine in general, lies in the broad evaluation of all factors concerning the tubercle bacilli as well as the disease as a whole, with careful scientific experimental checking to avoid all possible errors in the interpretation of results."

Regardless of the apparent visual experimental results with sulfanilamide [2] and sulfapyridine,[3] it was pointed

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Owing to lack of space, this paper has been abbreviated for publication in THE JOURNAL. The complete article will appear in the reprints, a copy of which will be sent by the authors on request.

1. Corper, H. J.: Chemotherapy of Tuberculosis: A Review, Tr. Nat. Tuberc. A. **36**: 67, 1940.
2. Corper, H. J.; Cohn, M. L., and Bower, Clarence: Sulfanilamide in Tuberculosis, Am. Rev. Tuberc. **40**: 452, 1939.
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out that the effect noted is attributable to the toxicity of these compounds and that it would not appear to be justified to use them in the treatment of human tuberculosis per se. Yet in spite of this warning and plea for a better scientific evaluation of these compounds, cursory tests have been the usual rule and resort to human use of no possible scientific value has been common, ranging from sulfanilamide through almost all the newly prepared and related chemicals in this class of compounds.

In earlier investigations the significance of oxygen for the growth of the tubercle bacillus both in vitro and in vivo was noted, and as early as 1924 it was observed that the constriction of the rabbit's ear retarded the development of local tuberculosis in the auricle.[5] Then in 1927 the importance of slight changes in oxygen tension on the growth of tubercle bacilli was pointed out.[6] It appeared also that changes in bodily conditions which can alter the oxygen dissociation curve of the blood may exert a decided influence on the progress of the disease. In a recent publication [7] it was noted that the growth of submerged tubercle bacilli in nonprotein liquid mediums is usually sparse and is affected appreciably by any factors or influences which retard the ready exchange of air or oxygen into the medium. The tubercle bacillus is an aerobe primarily and therefore grows best in vitro with a plentiful supply of air (oxygen). It is capable of sparse growth in practically air (oxygen) exhausted surroundings on a good nutrient. Rich and Follis, who were among the first to note the apparent retarding effect of sulfanilamide on guinea pig tuberculosis,[8] unrelatedly observed [9] in 1942 that the progress of tuberculous infection was appreciably inhibited in animals infected with virulent tubercle bacilli and kept continuously in a chamber at low oxygen tension.

In 1943 Gallomon [11] reported that, while sulfanilamide, sulfapyridine, sulfathiazole and sulfathiazoline showed no appreciable effect in guinea pigs, the sulfones promin and diasone (2398) produced favorable results, with diasone being most favorable from the standpoint of mortality and histologic change. A little later Feldman, Hinshaw and Moses [12] reported that while "certain of the compounds containing a sulfone nucleus have been found highly effective in influencing favorably the course of tuberculosis in guinea pigs, most of them unfortunately are objectionably hemotoxic" and "this fact, while of little consequence in dealing with guinea pigs, has definitely limited the amount of most of the drugs of this type that can be given safely to human beings." They concluded that, although less toxic, it is also less effective than the parent substance in its capacity to deter tuberculous infections in guinea pigs.

Encouraging for the effectiveness of these compounds were the reports that they were tuberculostatic in vitro and in vivo. Smith and his associates [13] found partial to complete inhibition of growth of tubercle bacilli to approximate concentrations of 1 to 10 mg. per hundred cubic centimeters except for promin, which required 100 mg. per hundred cubic centimeters. Their results, however, for in vivo interpretation are vitiated by using glycerol bouillon, a poor nutrient medium, for test nutrient. They [14] also conclude that prolonged cultivation of tubercle bacilli on a promin-containing medium attenuates their virulence and that this persists after the strain is returned to control mediums. In a study of the in vivo effects of diasone, Feldman and his associates [12] made cultures of composite suspensions of portions of the livers and spleens of 8 treated animals and obtained negative results in all instances except 1, inferring a cidal effect of treatment.

Encouraged by these reports, Petter and Prenzlau [16] began diasone administration to patients in 1943 and noted definitely favorable changes in symptoms and objective findings after sixty days of chemotherapy.

In considering the effects of sulfonamides on the blood of man, Kracke [18] noted that cyanosis is often seen in patients taking sulfanilamide, infrequently in those taking sulfapyridine and extremely rarely in those taking sulfathiazole and sulfadiazine; in any event the occurrence of the cyanosis has little significance for man, and the cause remains unsettled; with sulfadiazine there appears to be no interference with oxygen carrying capacity.

In a recent volume on autonomic regulations Gellhorn [19] pointed out that the lower animals, compared with the higher, including man, possess a lesser susceptibility to a great many natural variations and especially to wider latitudes of depressed oxygen tensions as displayed even in internal mechanisms of regulation of such features as anoxia.

The studies reported here were concerned primarily with diasone as a representative of the sulfones and were initiated in an effort to learn the mechanism of the retarding effect of the sulfonamide and sulfone preparations in tuberculosis beyond that noted previously for sulfanilamide and sulfapyridine. The work was centered mainly about diasone because this compound offered many advantages to a better solution of the mechanism involved and because Drs. George W. Raiziss and George R. Hazel of the Abbott Laboratories expressed a willingness to cooperate in every way in an effort to elucidate this important subject.

Although attacking the problem of the treatment of animal tuberculosis in a different manner from previous observers and to obtain more speedy results, we were able essentially to verify the fact that certain sulfonamide drugs and certain sulfones did display a retarding effect on guinea pig tuberculosis. Taking advantage of our previous studies and technics, however, we used intravenous infection in the guinea pig in most cases. This produces a rapidly fatal tuberculosis with highly virulent human and bovine tubercle bacilli, becomes

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13. Smith, M. I.; Emmart, E. W., and Westfall, B. B.: The Action of Certain Sulfonamides, Sulfones and Related Phosphorus Compounds in Experimental Tuberculosis, J. Pharmacol. & Exper. Therap. **74**: 163, 1942. Smith, M. I.; Emmart, E. W., and Stohlman, E. F.: The Action of Some Derivatives of 4-4' Diaminodiphenylsulfone in Experimental Tuberculosis, Am. Rev. Tuberc. **48**: 32, 1943.

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18. Kracke, R. R.: The Effects of Sulfonamide Drugs on the Blood, Am. J. Clin. Path. **14**: 191, 1944.

19. Gellhorn, Ernst: Autonomic Regulations: Their Significance for Physiology, Psychology and Neuropsychiatry, New York, Interscience Publishers, Inc., 1943.

graded off with less virulent strains and small infecting doses [20] and makes it possible to consummate results in from one to two months or less in comparison to the usual three months to a year. It is particularly valuable in obtaining leading information and, if properly performed and interpreted, can yield information equally valuable to the longer duration tests.

TABLE 1.—*Experiment in Duration of Life*

Infection controls:	1. Died 14 days, spleen	1.3 Gm.
	2. Died 15 days, spleen	1.6 Gm.
Average duration	3. Died 16 days, spleen	2.7 Gm.
of life 15.5 days	4. Died 17 days, spleen	3.1 Gm.
Diasone treated:	5. Died 18 days, spleen	7.8 Gm.
	6. Died 24 days, spleen	22.0 Gm.
Average duration	7. Died 30 days, spleen	6.2 Gm.
of life 26 days	8. Died 33 days, spleen	12.3 Gm.

THE EFFECT OF DIASONE ON EXPERIMENTAL TUBERCULOUS INFECTION

The guinea pigs were young and weighed from 250 to 300 Gm. when the experiment was initiated. Young animals were chosen since they proved better suited for these experiments, as will be shown later, than older and larger animals. Drug controls given 4 grains (0.26 Gm.) of diasone orally daily for thirty days showed no apparent gross effects except for the dark appearance of the spleen particularly and internal organs, as was noted with sulfanilamide,[21] and there was a coincident splenomegaly in most cases, the weight having increased from the normal of 0.7 to 1.2 Gm. to 2.3 Gm. The infection controls, given intravenously 1 mg. of fine suspension of a virulent human strain of tubercle bacilli, number 4008, died of miliary tuberculosis especially visible in the lungs; while the diasone treated animals, given 4 grains (0.26 Gm.) daily and begun coincident with infection, showed the same miliary pulmonary disease with a cyanotic splenomegaly. An illustrative experiment in duration of life is given in table 1.

In these experiments it is noted that a definite prolongation of life of the young guinea pigs occurs, resulting apparently from the oral diasone treatment. When the same experiment is repeated with the intravenous injection of 1 mg. of a low virulent strain of human tubercle bacilli (H 37, N. J. H.), the results become even more striking in guinea pigs. Such an experiment is reported in table 2.

TABLE 2.—*Experiment with Injection of a Low Virulent Strain of Human Tubercle Bacilli*

Infection controls:	1. Died 33 days, spleen	2.4 Gm.
	2. Died 35 days, spleen	3.8 Gm.
Average duration	3. Died 48 days, spleen	7.8 Gm.
of life 41 days	4. Died 49 days, spleen	5.3 Gm.
Diasone treated:	5. Died 86 days, spleen	29.9 Gm.
	6. Killed 102 days, spleen	2.5 Gm.
Average duration	7. Killed 102 days, spleen	2.7 Gm.
of life over 98 days	8. Killed 102 days, spleen	2.7 Gm.

It is obvious here that diasone has retarded the tuberculosis in the guinea pig infected intravenously with a low virulent strain of human tubercle bacilli and that with the natural regression of the splenic infection there has been a subsidence of the splenomegaly probably resulting from both the bacilli and the diasone. However, cultures from the organs of these animals indicate the absence of any cidal effect on the bacilli, as will be shown later.

With intravenous and subcutaneous diasone treatments, the effects were not consistent and large treatment doses were detrimental to the animal, resulting in earlier lethal effects.

THE EFFECT OF DIASONE IN VITRO

Although translation of in vitro static and cidal effects on tubercle bacilli into in vivo interpretation requires extreme caution, such information, properly obtained, may prove invaluable for practical purposes. It is for this reason that such tests should approximate as nearly as possible the nutrient conditions of in vivo circumstances and should also be elaborated on by in vivo studies. Since good nutrients differ widely from poor nutrients for tubercle bacilli in many respects and since graded studies are thus made possible, the following information was obtained by studying growth on a good nutrient medium—the glycerol egg yolk medium.[23] The results of a typical static test with different concentrations of diasone incorporated in a glycerol egg yolk medium is recorded in table 4. It is to be noted from table 4 that the lowest concentration of diasone exerting a perceptible effect is 50 mg. per hundred cubic centimeters with small (0.000,001 mg.) plantings, which, however, does not become evident with all plantings until the 500 mg. per hundred cubic centimeters dilution is reached.

TABLE 4.—*Tuberculostatic Effect of Diasone Toward Virulent Human Tubercle Bacilli (H 4008)*

Concentration of Diasone in Milligrams per 100 Cc. in Glycerol Egg Yolk Medium	Amount of Bacilli in Fine Suspension per Cubic Centimeter Used for Testing		
	1.0 Mg.	0.001 Mg.	0.000,001 Mg.
1	2*	3	5
5	2	3	5
10	2	4	6
25	3	4	7
50	3	4	10
100	4	10	0
500	0	0	0

* The numeral indicates the number of weeks in which growth first appeared on the medium.

In a further cidal time test with a very high concentration of diasone, 4.25 per cent, the contact results are recorded in table 5. It is to be noted from the results recorded in table 5 that even in high concentrations (over 4 per cent) diasone is effective in preventing positive plants with small numbers of bacilli only after six hours' contact, and it took about twenty-four hours to prevent successfully plants from all grade plantings. Since the foregoing experiments were not under actual natural conditions, they were further elaborated on by using blood from guinea pigs given large amounts of diasone by mouth and preparing a medium from this blood which was planted with human tubercle bacilli. The results of these cultures are recorded in table 6. It is to be noted that there is no retarding effect on the growth of small plantings of tubercle bacilli by the presence of 6 to 9 mg. per hundred cubic centimeters in the analyzed blood of guinea pigs fed large amounts of diasone orally.

A similar cidal time test with the blood obtained from orally diasone treated guinea pigs gave the results

20. Corper, H. J., and Cohn, M. L.: The Virulence of Tubercle Bacilli and the Fallacy of Assuming the Grade of Virulence from Arbitrary Designations, Am. J. Clin. Path. **13**: 352, 1943.
21. Corper, Cohn and Bower.[2] Corper and Cohn.[3]

23. Corper, H. J., and Cohn, M. L.: Media for Tubercle Bacilli, Am. Rev. Tuberc. **46**: 560, 1942.

recorded in table 7. It is to be noted from table 7 that there is no effect on the recovery of tubercle bacilli from the blood obtained from orally diasone treated guinea pigs when the analyzed concentration approximated 8 mg. per hundred cubic centimeters and when contact with bacilli in the blood was maintained at 37 C. for as long as ten days. The differences noted in the higher dilution plantings of tubercle bacilli are due to the fact that whole blood had to be treated with oxalic acid before planting, since whole blood itself retards growth. This accounts for the apparently irregular results recorded.

TABLE 5.—*Tuberculocidal Time Effect of Diasone Toward Virulent Human Tubercle Bacilli (H 4008)*

Time of Exposure	Amount of Bacilli in Fine Suspension per Cubic Centimeter Used for Testing		
	10 Mg.	0.1 Mg.	0.000,1 Mg.
Control	2†	3	3
Immediately*	3	3	5
1 hour	3	3	5
2 hours	3	3	5
4 hours	3	4	6
6 hours	3	5	0
8 hours	4	6	0
24 hours	0	0	0

* For method used see Cohn, M. L.: J. Bact. **27**: 517, 1934. To 0.5 cc. of suspension is added 0.5 cc. of 4.25 per cent diasone solution, the mixture is incubated at 37.5 C. for the time indicated, then the mixture is diluted to 50 cc. to stop action, and then plants are made on glycerol egg yolk medium.

† The numeral indicates the number of weeks in which growth first appeared on the medium.

THE IN VITRO CELLULAR TOXICITY OF DIASONE

The effect of diasone on phagocytosis in vitro, according to the method of Welch and Hunter,[24] was tested using concentrations of 0.01 to 1 per cent of diasone with the results shown in table 8. It is to be noted from the results recorded in table 8 that phagocytosis is retarded only when a concentration of 0.5 per cent of diasone is attained. Blood taken from guinea pigs given large doses of diasone orally did not differ in phagocytosis from the results noted in table 8 for normal blood.

TABLE 6.—*Effect of Diasone in Blood Medium on the Growth of Virulent Human Tubercle Bacilli (H 4008)*

Concentration of Diasone in Blood	Amount of Tubercle Bacilli in Fine Suspension per Cubic Centimeter Used for Planting	
	0.001 Mg.	0.000,001 Mg.
Control*	5‡	9
A. 8 mg. per 100 cc.*	5	9
Control†	4	11
B. 6 mg. per 100 cc.†	4	9
Control†	4	5
C. 9 mg. per 100 cc.†	5	8

* These mediums were prepared by adding 3 per cent glycerol to the blood and inspissating.

† These mediums were prepared by adding 3 per cent glycerol and 25 per cent water to the blood and inspissating.

‡ The numeral indicates the number of weeks in which growth first appeared on the mediums.

A. The blood for this medium was obtained by cardiac puncture after oral administration of 4 grains (0.26 Gm.) of diasone each hour to a 650 gram guinea pig for a total of 28 grains (1.8 Gm.). The blood was taken 25 minutes after last feeding.

B. Five grains (0.35 Gm.) each hour for a total of 35 grains (2.3 Gm.) and blood taken 30 minutes after last feeding.

C. Same as B.

In a similar way the toxicity of diasone was tested by the method of unstained cell counts of Schrek,[25] the results of which are recorded in table 9. It is to be noted from the results recorded in table 9 that diasone in concentration of 0.5 per cent or over is toxic to guinea pig bone marrow cells. If we compare these findings on the effect of diasone on phagocytosis and cell death with the cidal time effect of diasone on human tubercle bacilli, it would appear that the tubercle bacilli are less susceptible to the diasone than the body cells so far as this is determinable by these methods and comparisons.

EFFECT OF DIASONE ON BACILLI IN VIVO

When tubercle bacilli are injected intravenously into guinea pigs, two phases of the study might yield data of value: the one, and probably more important, is their survival in the tissues; and the other, their persistence in the blood. Table 10 records the results of cultures from blood samples taken at various intervals after virulent infection, and in table 11 the results of culture of the important internal organs after infection with a low virulent strain of human tubercle bacilli are recorded.

TABLE 7.—*The Tuberculocidal Time Effect of Blood Containing Diasone Toward Virulent Human Tubercle Bacilli (H 4008)*

Time of Contact	Amount of Bacilli in Fine Suspension per Cubic Centimeter Added to the Blood			
	Control Blood*		Diasone Blood*	
	0.01 Mg.	0.000,01 Mg.	0.01 Mg.	0.000,01 Mg.
Control suspension	3†	4	3	4
Immediately	5	0	4	10^{1}
6 hours	5	6^{1}‡	5	10^{1}
1 day	5	0	5	0
2 days	5	6^{1}	5	10^{1}
3 days	5	8^{1}	5	6^{2}
5 days	5	8	5	0
6 days	5	11^{1}	5	8^{1}
10 days	5	0	5	0

* The blood was obtained by cardiac puncture from guinea pigs. The diasone blood was obtained from a guinea pig which weighed 1,350 Gm. and which was given orally 5 grains (0.33 Gm.) of diasone each hour for a total of 35 grains (2.3 Gm.). This blood contained 8 mg. of diasone per hundred cubic centimeters. To 9 cc. of blood was added 1 cc. of bacillary suspension and stored at 37 C. for time indicated. One cc. of blood bacillary mixture was treated with 5 per cent oxalic acid in the usual manner of sputum culture isolation for tubercle bacilli, and after incubation and neutralization it was planted on glycerol egg yolk medium.

† The numeral indicates the number of weeks in which growth first appeared on the medium, three tubes being planted.

‡ An exponent added to the numeral indicates the number of tubes which revealed a positive growth at the time indicated by the numeral.

The results recorded in tables 10 and 11 indicate that although diasone treatment may prolong the life of virulent infected guinea pigs it does not prevent or alter particularly the occurrence of the bacilli in the blood. Continuous daily treatment with diasone for up to one hundred and two days does not prevent their recovery in relatively large amounts, as determined by the speed of appearance of positive cultures from the lung, liver, spleen and kidney of the treated guinea pigs even though low virulent strains of human tubercle bacilli are used for infecting.

In another experiment in which avirulent human tubercle bacilli were given intravenously in 1 mg. amounts and in which case these bacilli are usually

24. Welch, H., and Hunter, A. C.: Method for Determining the Effect of Chemical Antisepsis on Phagocytosis, Am. J. Pub. Health **30**: 129, 1940.

25. Schrek, R.: Measurement of Toxicity of Antiseptics by the Method of Unstained Cell Counts, Proc. Soc. Exper. Biol. & Med. **54**: 283, 1943.

destroyed naturally within about a year in the organs, diasone treatment of 16 grains (1 + Gm.) was given before infecting and continued thereafter with the results recorded in table 12. The results recorded in table 12 indicate that diasone given orally in maximum dose to guinea pigs for up to one hundred days displayed no appreciable effect on the viability of the intravenously injected avirulent human tubercle bacilli contained in the lung, liver, spleen and kidneys of these animals.

It would appear from the experiments thus far recorded that diasone exerts no cidal or static action on human tubercle bacilli in vivo directly, and the cause of the indirect or remote effect which acts by retarding multiplication of the bacilli in the organs of the guinea pig should be sought further.

EFFECT OF DIASONE TREATMENT ON THE SPREAD OF THE BACILLI

In order to study the spread of the bacilli more carefully from a remote site and affected as little as possible by the internal organic disease, a series of guinea pigs was infected intracutaneously with 0.01 mg. fine suspension of viable avirulent human tubercle bacilli in one experiment and the same amount of virulent human tubercle bacilli (number 4008) in another. One half of each set of animals was kept as controls and the other half was given orally daily 4 grains (0.26 Gm.) of diasone in solution. The injection site, about 1.5 cm. to the left of the umbilicus, the local tributary inguinal glands, the retroperitoneal glands and the important internal organs (lung, liver, spleen and kidney) were cultured; and no appreciable difference was noted between the cultural results with the treated and the untreated guinea pigs given an intracutaneous injection of avirulent or virulent tubercle bacilli in specimens obtained immediately after injection and one week, two weeks, four weeks and two months later.

TABLE 8.—*Effect of Diasone on Phagocytosis*

Time of Contact	Concentration of Diasone and Average Number of Phagocyted Organisms				
	0%	0.01%	0.1%	0.5%	1%
30 minutes	51	45	41	15	0
1 hour	47	45	39	17	0
2 hours	52	50	35	16	0
4 hours	35	39	29	15	0

TABLE 9.—*Effect of Diasone on Guinea Pig Bone Marrow Cells*

Time of Contact	Per Cent Stained Cells and Concentration of Diasone				
	0%	0.01%	0.1%	0.3%	1%
30 minutes	8	10	8	40	46
1 hour	7	9	10	39	53
2 hours	9	7	13	42	93

THE EFFECT OF DIASONE ON THE RESOLUTION OF TUBERCULOSIS

Since some observers have stressed the resolving effect of diasone treatment on tuberculosis, an effort was made to gain more information on this phase of the subject using highly virulent human tubercle bacilli (H 160) subcutaneously to obviate such errors as might be introduced by the use of low virulent strains.[28] The results of such a study are recorded in table 16. The results recorded in this table appear to indicate that although diasone treatment is capable of retarding organ tuberculosis resulting from a subcutaneous infection with virulent human tubercle bacilli the retardation is not particularly evident in the effect on the glandular tuberculosis in comparison. If treatment with diasone is discontinued, the tuberculosis in the guinea pig again progresses at a rate apparently commensurate with that of the original infection.

TABLE 10.—*The Occurrence of Tubercle Bacilli in the Blood of Guinea Pigs Treated with Diasone*

Strain	Treatment	Time in Days After Intravenous Injection (Ear Vein) of 1 Mg. of Bacilli When Blood Was Cultured								
		Immediately	3	7	10	14	17	21	25	28	31
Virulent human tubercle bacilli (H 4008)	Not treated	4*	11	0	12	3	D†				
		0	0	0	0	3	D				
	4 grains (0.26 Gm.) of diasone daily	0	8	4	7	4	4	0	6	3	D
		0	0	0	0	0	6	6	D		
Avirulent human tubercle bacilli (Corper)	Not treated	6	3	0	0	0	0	0	0	0	0
		4	6‡	7	0	0	0	0	0	0	0
	4 grains (0.25 Gm.) of diasone daily	8	4	0	0	0	0	0	0	0	0
		4	5	0	0	0	0	0	0	0	0

* The numeral indicates the number of weeks when growth first appeared on the culture tubes.
† The D indicates the death of the guinea pig.

AN ATTEMPT TO EXPLAIN ACTION OF DIASONE

Since no evidence has been obtained that diasone is able to destroy tubercle bacilli per se in vivo or to affect the specific immune or allergic condition directly in a way that might explain its mode of action, a number of other conceptions were considered as possibilities in this mechanism. One fact, however, appears to stand out distinctly, and that is that whatever action diasone exerts on tuberculosis in the guinea pig this action is one of indirect consequence of temporary effect exerted only as long as the drug is administered to the animal. Since diasone in itself is neither sufficiently cidal nor static to exert an influence directly on the bacilli, it must be assumed that the effect in all likelihood is one of temporary alterations in the guinea pig body. For this reason an approach at mechanisms was tried either to resemble diasone action, to counteract it or to reinforce it. Among the substances which might

TABLE 11.—*The Presence of Tubercle Bacilli in the Organs of Guinea Pigs Treated with Diasone*

Time After Infection * When Cultured	D = Died K = Killed	Culture Results			
		Lung	Liver	Spleen	Kidney
86 days †	D	3‡	3	3	3
102 days	K	3	3	3	2
102 days	K	3	4	3	3

* These animals were infected by giving 1 mg. of a low virulent strain of human tubercle bacilli (H 37—N. J. H.) intravenously and were treated daily with 0.26 Gm. of diasone in solution orally.
† The untreated controls of this series died on the 32d, 35th, 48th and 49th day with tuberculosis.
‡ The numeral indicates the number of weeks after which culture was positive.

28. Corper, H. J., and Cohn, M. L.: Specific Tuberculosis Immunity During Infection, Yale J. Biol. & Med. **16**: 333, 1944.

act like diasone, thiourea, an antioxidant and thyrotoxic agent, was tried with no appreciable beneficial effect but rather detrimental and toxic effect on tuberculosis in the guinea pig. Thyroxin when given in a dose of 0.4 mg. per day by mouth exerted a definite detrimental effect on primary guinea pig tuberculosis. Para-aminobenzoic acid, which is considered a neutralizer of sulfanilamide action, exerted no appreciable effect on the diasone action within the limits of the experimental tests. Likewise, attempts to counteract diasone action with 40 per cent oxygen inhalations continuously throughout the experimental period had no appreciable effect on the tuberculosis in the guinea pig, but it did prolong the life of the infection controls in the oxygen chamber as compared with those maintained at room oxygen tension. However, an increase of temperature and humidity in the oxygen chambers increased the lethal results very much and reduced the effect of diasone to such an extent that the infected guinea pigs lived only as long as the infection controls did at room temperature, thus neutralizing all diasone action by this means and suggesting the possibility that reduced body temperature of the diasone guinea pigs may play a part indirectly in the diasone effect even though not directly effective in itself.

TABLE 12.—*The Persistence of Viable Avirulent Human Tubercle Bacilli in the Organs of Diasone Treated Guinea Pigs*

Time After Intravenous Injection of 1 Mg. of Tubercle Bacilli When Guinea Pig Was Killed or Died	Treatment	Culture Results			
		Lung	Liver	Spleen	Kidney
Killed, 30 days....	None.....	3*	3	3	4
		3	3	3	4
	4 grains (0.26 Gm.)	3	3	3	4
	of diasone daily	3	3	3	3
Killed, 100 days...	None.....	3	3	3	6
		4	3	3	5
	4 grains (0.26 Gm.)	3	4	3	4
	of diasone daily	3	4	3	5
Died, 56 days.....	16 grains (1 Gm.)	3	3	3	4
Killed, 66 days....	of diasone daily †	3	3	3	4

* The numeral indicates the number of weeks after which culture was positive.

† These guinea pigs were made tolerant to the diasone by weekly doubling of the dose. They were given 1 grain daily for the first week, 2 grains daily the second week, 4 grains daily the third week, 8 grains daily the fourth week and 16 grains daily thereafter. They were injected with the tubercle bacilli intravenously when the 16 grain dose was started.

TABLE 15.—*Effect of Diasone on the Oxygen Content of Blood in Guinea Pigs*

Time after Oral Administration of 4 Grains (0.26 Gm.) of Diasone	Normal Guinea Pigs				Same Guinea Pigs after Oral Administration of 4 Grains (0.26 Gm.) of Diasone Daily for One Week			
	Concentration of Diasone in Blood, Mg. per 100 Cc.	Oxygen Content, Volume %	Oxygen Capacity, Volume %	Per Cent Saturation	Concentration of Diasone in Blood, Mg. per 100 Cc.	Oxygen Content, Volume %	Oxygen Capacity, Volume %	Per Cent Saturation
Control, no diasone.....	0	16.5*	20.7	80	0	16.8	20.5	82
Immediately...	0	15.1	20.7	73	1.0	12.6	15.9	80
1 hour.....	2.0	13.5	16.0	84	2.0	6.9	10.3	67
2 hours.....	1.5	15.4	18.0	86	1.5	10.7	15.0	70
4 hours.....	4.0	10.6	14.0	76	4.0	9.5	12.9	73
6 hours.....	4.0	9.9	12.0	83	4.0	8.0	13.1	61
12 hours.....	5.0	10.9	16.4	66	5.0	10.2	12.7	80
24 hours.....	1.5	12.3	18.8	66	2.5	10.4	13.3	78

* The oxygen content and oxygen capacity of the blood were determined by the D. D. Van Slyke and J. M. Neill method (J. Biol. Chem. 61: 523, 1924).

THE SIGNIFICANCE OF INTRAVITAL OXYGEN IN THE EFFECT OF DIASONE IN TUBERCULOSIS

In explanation of the action of sulfanilamide and sulfapyridine in retarding tuberculosis in the guinea pig, attention was called especially to the cyanotic splenomegaly, particularly because of the significance of the spleen in generalized guinea pig tuberculosis [29] as the organ of susceptibility in this animal on the assumption that this finding, being an outstanding one, might be concerned in some way with the general effect on tuberculosis noted at that time. It was then designated as the evidence of toxicity of the sulfanilamide and sulfapyridine. Now it is interesting that sulfadiazine, which does not display the cyanotic splenomegaly effect when given in large doses to guinea pigs, also displays no appreciable retarding effect on the organic tuberculosis in these animals infected intravenously with virulent human tubercle bacilli, nor does it prolong the life of intravenously infected animals such as occurs with diasone. This finding and other like findings led us to the study of the anoxemic picture under diasone and other treatments. The results of such studies in guinea pigs are recorded in table 15.

The findings recorded in table 15 indicate that diasone treatment depresses the oxygen content of the arterial blood in guinea pigs perceptibly and that this effect occurs within two hours after the primary oral administration of 4 grains (0.26 Gm.) of diasone and persists twenty-four hours after administration, and diasone also persists in the blood. If treatment continues for one week, the depression of oxygen to a low level occurs within one hour after the last oral administration to the guinea pig. In view of these findings it was interesting to note whether it concerned a direct effect of diasone on the blood, which would not conform to the fact that injection treatments were not as successful as oral administration. In in vitro tests it was found that concentrations of diasone of 10 to 100 mg. per hundred cubic centimeters added to venous blood had no effect on the ability of the blood to be oxygenated; as a matter of fact, diasone added to blood in vitro absorbed as much oxygen as did the same control blood without diasone. Likewise, diasone added to oxalated blood did not displace oxygen in the blood. It is inferred that the action is not that of diasone as such but either that a change occurs in gastrointestinal absorption or that the effect is an influence on the hemoglobin of the blood or its normal oxygenating mechanisms. Sulfadiazine given to guinea pigs orally in large amounts did not depress the oxygen content or oxygen absorption of the blood.

In like examinations of the blood of rabbits which had received diasone (10 grains [0.65 Gm.] daily orally for months) no appreciable depression of the oxygen content or oxygen absorption power was noted. This might possibly explain the unsatisfactory results obtained from the diasone treatment of tuberculosis in the rabbit. The examination of the arterial blood of human patients who had received 1 Gm. (15 grains)

29. Corper, H. J.; Lurie, M. B., and Uyei, Nao: The Variability of Localization of Tuberculosis in the Organs of Different Animals, Am. Rev. Tuberc. 15: 389, 1927.

of diasone daily for four months, the routine recommended for clinical use, as compared with arterial blood from nontreated tuberculous patients, showed no appreciable depression of the oxygen content.[30]

SUMMARY AND CONCLUSIONS

1. The retarding effect previously noted for some of the sulfonamide drugs in tuberculosis in the guinea pig is noted also for diasone as a representative of certain effective sulfone compounds.

2. This retarding effect of diasone on the tuberculosis in the guinea pig does not appear to be due to any direct cidal or static action of the diasone itself (*a*) since diasone does not exert a cidal or static effect on human tubercle bacilli in vitro in concentrations attainable in the body (*b*) nor does it kill avirulent human tubercle bacilli in vivo when administered for long periods (over one hundred days) in maximal effective therapeutic amounts orally as determined by their viability in the lungs, liver, spleen and kidneys after this time (*c*) nor does it abolish the viability of virulent human tubercle bacilli in the organs of the diasone treated guinea pig (*d*) nor does it retard virulent glandular progression from an intracutaneous site.

TABLE 16.—*A Comparison of Untreated and Diasone Treated Tuberculosis in the Guinea Pig*

Time Killed After Subcutaneous Infection with 0.000,1 Mg. of Virulent Human Tubercle Bacilli (H 100)	Treatment	Glandular Tuberculosis	Organ Tuberculosis
28 days	No treatment	1*	0†
		2	1
56 days	No treatment	2	1
		2	2
		2	1
		3	2
56 days	Diasone 2 grains (0.13 Gm.) orally daily started 28 days after infection	2	1+ cyanotic splenomegaly
		1	Cyanotic splenomegaly
		1	Cyanotic splenomegaly
		2	Cyanotic splenomegaly
97 days	No treatment	1	4
		2	4
		3	4
		2	4
97 days	Diasone 2 grains (0.13 Gm.) orally daily started 28 days after infection and continued through experiment	2	1+ cyanotic splenomegaly
		2	1+ cyanotic splenomegaly
		3	1+ cyanotic splenomegaly
		2	1+ cyanotic splenomegaly
97 days	Diasone 2 grains (0.13 Gm.) orally daily started 28 days after infection and discontinued 28 days later	2	2
		3	3
		2	2
		3	3

* This figure is an arbitrary gradation of the glandular tuberculosis and can be considered only an objective approximation, the grades used being from 0 to 4.

† The organic tuberculosis of lungs, liver and spleen are also arbitrarily graded from 0 = no visible macroscopic tuberculosis to 4 = a massive involvement of the organs. In the case of the diasone treated animals, which all display a cyanotic splenomegaly after treatment has been continued in the dosage used, the tubercles are difficult to see even when present.

3. In experiments in which the diasone treatment has been interrupted the tuberculosis caused by virulent human tubercle bacilli appears to continue when the diasone treatment is stopped, and the treatment is not effective in other animal species such as the rabbit infected with virulent bovine bacilli.

4. Although the diasone treatment is also beneficial in guinea pigs that have been immunized with avirulent human tubercle bacilli and then are infected, pretreatment with diasone during the immunizing period and discontinuance during infection may exert either no effect or a definite detrimental effect on the tuberculosis in the guinea pig.

5. Diasone treatment of guinea pigs during specific vaccination displays no effect on the immunization against tuberculosis, nor does it exert any effect on the allergic hypersensitiveness or the tuberculin or bacillary allergic intoxication.

6. The effect of diasone treatment on the tuberculosis of guinea pigs appears to be directly related to the cyanotic effect on the internal organs and to that particularly noted in the spleen of the guinea pig as well as the liver. Sulfonamide drugs, such as sulfadiazine, which do not exert this effect are also ineffective toward the tuberculosis.

7. In guinea pigs treated orally with diasone in effective amounts against tuberculosis a definite anoxemia exists which appears to be related to the effect noted; and, although it may not be the only factor implicated, it would appear to be a significant part of this retarding mechanism possibly as an expression of a general or organic anoxia.

8. In view of the fact that patients treated orally with 1 Gm. of diasone daily for months did not display an evident anoxemia, it is doubtful whether a therapeutic effect for diasone has been attained clinically in tuberculosis in man with the sulfonamide or sulfone drugs thus far.

9. In view of the greater sensitivity of the human being to anoxic and anoxemic effects and the fact that such a mechanism appears to explain the favorable results noted on tuberculosis in the guinea pig, it would not seem warranted to continue human experimentation with these drugs at present because of the hazards of their use in the tuberculous and the fact that all the necessary information for proper evaluation can be obtained from careful animal experimentation.

30. These examinations of human blood were made possible through the courtesy of Dr. Charles J. Kaufman, medical director of the National Jewish Hospital.

Hospital Facilities in Hawaii.—In 1940 there were 70 institutions with beds for medical care in the Territory of Hawaii, with a total of 6,501 beds, or 15.4 beds per thousand of population (based on a total population of 423,000). Sixty-eight of these institutions were hospitals or sanatoriums, one was a nursing home of 125 beds controlled by the government and one was a nonprofit institution with an infirmary and 5 beds. Twenty-seven were located in Honolulu County, 21 in Hawaii County, 12 in Maui County, 9 in Kauai County and 1 in Kalawao County. About a fourth of the 68 hospitals mentioned were not registered; these, however, provided only about 8.6 per cent of the total number of beds. Sixty-two per cent of all beds in 1940 were provided by government controlled hospitals in spite of the fact that such hospitals constituted only 26 per cent of the total number. Most hospitals in the territory are small; 44 per cent in 1940 had less than 25 beds each. Utilization of hospital and sanatorium facilities in that year was 73 per cent of capacity.—Simmons, James S.: Global Epidemiology, Philadelphia, J. P. Lippincott Company, 1944.

Clinical Notes, Suggestions and New Instruments

BITE AND DENTAL INJURY

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A distinction, it seems to me, should be made between a bite and a dental injury, either a self-inflicted bite [1] or a bite by another person.

Recently a clinical note [2] appeared in THE JOURNAL reporting a case of actinomycosis secondary to a "human bite." While playing volley ball "the patient sustained the human bite wound. He struck his elbow against another man's front teeth."

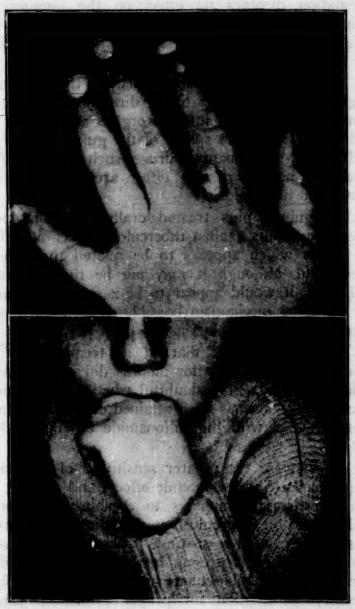

Fig. 1.—A heavy callus from pressure against the teeth while finger sucking. A tooth injury, not a bite.

Hitting any part of one's body against somebody's teeth and sustaining an injury should not be called a bite. Barnes and Bibby [3] report a case of knuckle wound incurred by striking a tooth in a fight, and it is correctly called a "human tooth wound." Boland [4] says that, "strictly speaking, trauma to the clenched fist is not an actual bite." Boyce [5] entitles his paper "Human Bites" but in the text makes a distinction between true bites and tooth wounds.

In my own paper [1] figure 4*C* is erroneously described as due to biting, while it is a dental injury from pressure in the process of finger sucking.

Figure 1 shows a conspicuous warty lesion at the proximal end of the left index finger and a smaller one at the distal phalanx of the same finger due to pressure of that area against the teeth while finger sucking. The habit is so strong that the

Fig. 2.—A heavy one knuckle callus from knuckle chewing. A true bite.

child will not fall asleep unless with his index finger all the way in the mouth. It is similar in appearance and consistency to the lesions due to the actual chewing of the skin (fig. 2). Both are calluses from repeated dental trauma over a long period, but only one (fig. 2) can be called a bite, like the finger and toe biting (fig. 3).

Fig. 3.—Finger and toe nail biting in a 12 year old boy. A true bite.

The lesions as illustrated in figures 1 and 2 are far from rare. Surprisingly enough, they are often not diagnosed or they are diagnosed as a wart, a keloid, a sarcoid, a mycotic growth or an epithelioma and, accordingly, unnecessary biopsy, surgery or irradiation is done.

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From the Department of Dermatology, Boston University.

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4. Boland, F. K.: Morsus Humanus: Sixty Cases of Human Bites in Negroes, J. A. M. A. **116**: 127 (Jan. 11) 1941.
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AN IMPROVED TECHNIC FOR THE COLLECTION OF CEREBROSPINAL FLUID AFTER LUMBAR PUNCTURE

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The Dattner lumbar puncture needle [1] as modified by L. W. Harrison,[2] has been in use since 1937 primarily because of the low incidence of headaches associated with lumbar puncture. H. W. Allen,[3] who first reported on the use of this needle in England, stated that in 116 punctures in which the inner needle (25 British standard wire gage) penetrated the meninges only two headaches of incapacitating severity and sixteen mild headaches occurred. On the other hand, in 11 punctures in which the membranes had been punctured by the outer needle (20 British standard wire gage) severe headaches occurred in 5 cases.

The small caliber of the inner needle (25 British standard wire gage) requires that an average of one half hour elapse in order to collect 6 cc. of cerebrospinal fluid for laboratory examination. The search for a satisfactory method of holding a glass tube for collecting this fluid after lumbar puncture in our experience has gone through various stages in development. In an effort to reduce the number of assistants necessary to hold the tubes for collection of cerebrospinal fluid during the performance of lumbar punctures on several patients at one time, blocks of wood having graduated heights with holes to support the tubes were devised. These placed the mouths of the tubes near the needle openings but not as effectively as the more adjustable ring stands and buret clamps which were later adopted for the purpose. Neither method was entirely satisfactory to compensate for slight movements by the patient and required that the tube and holder be frequently adjusted.

A holder was finally devised consisting of 16 gage galvanized wire and bent as shown in figure 1. The hook, *B*, was formed to fit the groove, *A*, of the modified Dattner loosely and the

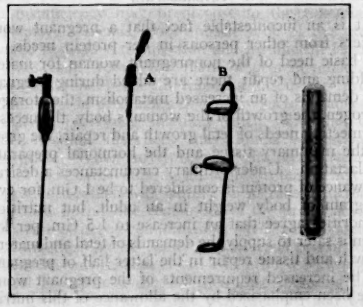

Fig. 1.—The Dattner needle, tube holder and tube.

loop, *C*, was designed so as to indicate the 6 centimeter level of the 15 cubic centimeter glass collecting tube.

The collecting tube and holder are sterilized in the autoclave with the other equipment to be used in lumbar puncture.

The lumbar puncture is performed under 2 per cent procaine-epinephrine local anesthesia with the patient on his side in the knee-chest position. After the cerebrospinal fluid begins to flow, the first ten drops are discarded to avoid contamination of the specimen with red blood cells, the glass tube is placed in the holder and the combination is suspended from the needle.

Fig. 2.—The holder and tube in place after lumbar puncture.

If necessary, the tube may be raised or lowered and will remain in the desired position, being in the grasp of the snug-fitting holder. The combined weight of the tube and holder is sufficient to bend the needle slightly, making the opening most dependent and preventing any of the fluid from running down the needle toward the patient's back. There has been no expression of added discomfort at the puncture site.

Regardless of the movements of the patient on the table, the cerebrospinal fluid collection tube is always in position (fig. 2). The nurse who is in constant attendance of these patients is free to assist the physician in performing a series of lumbar punctures in the same room and can easily supervise the collection of the fluid after the punctures have been effected.

On removal of the needle the perforation in the meninges, being small, closes with a minimal leakage of cerebrospinal fluid. After resting in the prone position for twenty minutes the patients are again ambulatory, freeing the nursing personnel from the serving of meals and other procedures necessary to bed patients.

In our opinion this is a very satisfactory method for collecting diagnostic cerebrospinal fluid specimens from ambulatory patients and minimizes the incidence of headaches associated with lumbar puncture.

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From the Chicago Intensive Treatment Center, Venereal Disease Control Program, Chicago Board of Health in cooperation with the U. S. Public Health Service.

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NEISSERIA PERFLAVA ENDOCARDITIS; RECOVERY

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The great majority of cases of subacute infectious endocarditis are caused by Streptococcus viridans. In Libman's [1] series 95 per cent were due to this organism, and in the cases tabulated by Blumer [2] 70 per cent were due to the streptococcus, 80 per cent of these proving to be S. viridans. In the past the disease has been almost uniformly fatal. The introduction of sulfonamides and penicillin in the treatment of endocarditis has, however, unquestionably reduced the mortality rate of this disease. The following history of a patient suffering from endocarditis is interesting because of the organism producing the disease and because the patient recovered under sulfonamide therapy.

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R. A., a man aged 45, admitted to the University of Kansas Hospital on Oct. 4, 1943, was somewhat confused mentally and had been ill for approximately three months, suffering from fever and "chilly sensations." In 1918 he had an attack of rheumatic fever and in 1828 a second attack.

On admission the patient showed a temperature of 101 F. and a pulse rate of 116. There were numerous petechiae scattered over the chest, back and abdomen, and several in the conjunctivas of both eyelids. Several splinter hemorrhages were obvious under the fingernails of both hands. The heart was slightly enlarged on percussion, and auscultation revealed a loud systolic murmur of maximum intensity over the mitral area, also well heard over the entire precordium and at the inferior angle of the left scapula. The spleen was not palpable.

Examination of the blood showed 3,130,000 red blood cells and 7,800 white blood cells. The hemoglobin (Haden-Hauser) was 53 per cent (8.3 Gm.). Blood cultures on October 5, 6 and 8 all showed growth on blood agar plates and in brain broth. The cultures on blood agar were white or grayish white, often slightly yellowish, granular in appearance and quite adherent to the culture mediums. In brain broth the growth was granular, showing a tendency to pellicle formation. Smears of the organism showed it to be a definite diplococcus, the transverse diameter being greater than the length of the axis. It was strongly gram positive. The patient's serum agglutinated the organism completely in dilutions of 1 to 5,120, 2 plus in dilutions of 1 to 10,240.

The organism was obviously an unusual etiologic agent in subacute infectious endocarditis. Further studies were carried out with the assistance of Dr. Noble P. Sherwood, professor of bacteriology in the University of Kansas. In semisolid mediums, acid was produced in dextrose, lactose, saccharose, mannite and maltose but not in inulin. No gas was produced in these mediums.

The diplococcus was strongly gram positive on isolation and for several successive generations but after cultivation for two months on artificial mediums became gram negative. It was not pathogenic for rabbits and guinea pigs and only slightly pathogenic for mice. Further study showed it to resemble Neisseria perflava except for the fact that it was originally gram positive.

The similarity of this organism to Micrococcus pharyngis siccus is obvious. Weed, Clapper and Myers [3] in 1943 reported a case of endocarditis caused by Micrococcus pharyngis siccus with recovery after treatment with heparin and sulfapyridine. They collected reports of 4 cases of endocarditis caused by this organism, beginning with the original case reported by Schultz [4] in 1918. Dammin [5] in 1941 described a fatal case of endocarditis due to an unidentified coccus which was gram negative constantly and did not ferment lactose or mannite, possibly Micrococcus pharyngis siccus. The differences between the organism we have isolated and Micrococcus pharyngis siccus are obvious. The former organism was originally gram positive and Micrococcus pharyngis siccus gram negative; our organism ferments lactose and mannite, Micrococcus pharyngis siccus does not.

The exact classification of the diplococcus found in our case of endocarditis is difficult. It has the cultural characteristics of Neisseria perflava, except that when first isolated it was gram positive and became gram negative only after cultivation on artificial mediums over a period of two months.

The patient was started October 8 on sulfamerazine in doses of 10 Gm. by mouth every twenty-four hours. The temperature, which for four days had ranged from 101 to 104 F., fell sharply and did not exceed 101 during the next three days. From October 21 to October 31 the temperature did not exceed 100 F. and from November 1 until the dismissal of the patient from the hospital on Feb. 24, 1944 remained normal. The patient received 10 Gm. of sulfamerazine by mouth daily for two months. It was then reduced to 4 Gm. daily for one month and then to 2 Gm. daily. This dosage caused no digestive symptoms, no leukopenia, no anemia nor any other untoward symptoms. The blood concentration of sulfamerazine varied from 13 mg. to 24.4 mg. per hundred cubic centimeters. The average concentration during the two months the patient received 10 Gm. of sulfamerazine daily was 17.7 mg. per hundred cubic centimeters. Following the administration of sulfamerazine, a blood culture on October 15 was negative for growth and eight succeeding blood cultures were negative.

On Jan. 22, 1944 the patient had an attack of paroxysmal auricular fibrillation lasting six hours. On questioning him it was learned that he had had similar attacks before entering the hospital. He was dismissed from the hospital on February 24, his temperature having been normal for four months. The patient was readmitted to the hospital on May 15, suffering from an infected ingrown toenail, and was kept under observation for two weeks. His temperature was normal during this period. One blood culture was negative. The loud systolic mitral murmur was still audible. He was again admitted to the hospital on October 28, suffering from a mild cardiac failure. The patient showed some pitting about the ankles, and the mitral murmur was still easily heard. The patient's temperature was normal, and two blood cultures showed no growth.

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Council on Foods and Nutrition

SPECIAL ARTICLE

This is the second of a series of articles discussing the significance of protein nutrition in health and disease. This material was prepared by the authors at the request of the Council and has been authorized for publication.

GEORGE K. ANDERSON, M.D., *Secretary.*

IMPORTANCE OF ADEQUATE PROTEIN NUTRITION IN PREGNANCY

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It is an incontestable fact that a pregnant woman differs from other persons in her protein needs. To the basic need of the nonpregnant woman for material building and repair there are added during pregnancy the demands of an increased metabolism, the storage of nitrogen, the growth of the woman's body, the necessity for meeting needs of fetal growth and repair, the growth of the mammary tissue and the hormonal preparation for lactation. Under ordinary circumstances a desirable allowance of protein is considered to be 1 Gm. for every kilogram of body weight in an adult, but nutritional authorities agree that an increase to 1.5 Gm. per kilogram is safer to supply the demands of fetal and maternal growth and tissue repair in the latter half of pregnancy.

The increased requirements of the pregnant woman have been emphasized by the allowance of this nutrient factor recommended by the Food and Nutrition Board of the National Research Council.[1] Their suggested allowances provide an increase to 85 Gm. for the average pregnant woman and to 100 Gm. for the lactating woman above the 60 Gm. suggested for the nonpregnant woman of equal weight. This stepping up of the protein intake to approximately 1.5 Gm. per kilogram of body weight during pregnancy and to 2.0 Gm. per kilogram during lactation in a woman weighing 56 Kg. presupposes a previously normal protein intake and nutritional status.

1. Committee on Food and Nutrition, National Research Council, Washington, D. C., Government Printing Office, 1941.

Recent surveys of food intakes of various groups in widely separated areas show diets less than satisfactory with respect to protein to be common. In a group of 514 pregnant women in Philadelphia the average intake of protein in a diet was 66 Gm. per day.[2] Burke,[3] Tompkins,[4] Leamy,[5] Arnell [6] and others have shown similar defects. When expressed in terms of desired body weight based on height, age and month of gestation, 92.7 per cent of the group of 514 pregnant women studied in Philadelphia received less than the recommended allowance of 1.5 Gm. per kilogram daily. If in pregnancy an intake of 1.5 Gm. of protein per kilogram is regarded as an index of a diet surely adequate in protein it was found that in the group of 514 pregnant women studied in Philadelphia only 13 per cent were receiving such a diet. Burke [8] found that in Boston 19 per cent of a group of pregnant women were receiving a good protein diet, while Ebbs [7] in Toronto found only 24 per cent.

Such defects in the diet may be caused by certain factors: economy, ignorance, custom or habit, actual or supposed food idiosyncrasies and erroneous advice. All but the first of these factors could be overcome by proper education. Students of the subject of nutrition have remarked that even in low economic groups an educational campaign of effective and intelligent nutrtion teaching has been absorbed readily and used well. Restrictions in protein intake or deficiencies in this factor are almost invariably accompanied by restrictions or deficiencies of other equally important factors. The minor nutritional deficiencies of a woman often become apparent only under a diet efficiency test of pregnancy,[8] when the physiologic strain of the condition reveals the borderline status of nutrition.

Deficiencies in the protein content of the diet of the pregnant woman lower her nitrogen level, deplete the body tissues by utilizing them for the normal protein needs, lower the serum protein level content and may lead to nutritional edema. By altering the colloid osmotic pressure of the serum protein, the dietary protein insufficiency may predispose to the toxemias of pregnancy. Anemia, poor muscle tone of the uterus, lowered resistance to infection and insufficient lactation may all result from a low plane of protein intake.

It should be borne in mind in discussing protein malnutrition in pregnancy that many such instances are occasioned by a long standing deficit. In other cases gastrointestinal disorders may hinder digestion or absorption. When early pregnancy has been characterized by excessive vomiting an acute protein deficit may be produced which will require an increased increment of protein during the remainder of the pregnancy.

Specific obstetric complications have been pointed out by Tompkins [4] in his study of the signs of nutritional deficiencies in pregnancy. In two groups of women, a control group on a diet of their own choosing and a study group receiving a diet well balanced and with a content of 110 Gm. of protein, it was noted that toxemia and mild hypertension were four times more frequent in the control group; edema was five times as frequent, preeclampsia eight times as frequent. Holmes [9] observed the clinical results in 1,400 pregnant women patients. The protein intake in one group ranged from 60 to 70 Gm. daily; in the other group the protein intake ranged from 110 to 120 Gm. daily. He found the incidence of toxemia, using as a criterion a blood pressure of at least 140/85 irrespective of the presence of albuminuria, was twice as frequent in the low protein group as in the high protein diet group.

Proteins in the diet are derived from both animal and vegetable sources. The animal proteins of meat, milk, eggs, cheese, poultry and fish should form at least 66 per cent of the protein requirements of the pregnant woman, since they furnish all the essential amino acids and are therefore of the highest biologic values. The remaining proteins are supplied by vegetables and nuts, such as peanuts and cashews, and legumes, especially soy beans and dried peas, and other lentils, and from bread and cereals of whole grain, particularly wheat. The vegetable proteins are inadequate sources of certain amino acids and, while they cannot replace entirely the animal proteins, they should be used not only as an accessory source of protein supply but for other essential food factors which they contain.

The metabolism of protein has been the subject of many years' study by physiologists. The experiments of Macy,[10] Hunscher,[11] Coons [12] and others on the metabolism of pregnancy have shown that patients store up large amounts of nutritive factors by nitrogen retention in their bodies. If such storage is steady and continuous, the nitrogen balance is regarded as normal. To this storage, which should be present in pregnancy, the term "positive nitrogen balance" is applied. Wilson [13] has shown that this storage of nitrogen begins as early as the tenth week of gestation. The storage of nitrogen at various periods has been regarded as in excess of the normal demands of growth of the products of conception and the maternal organism. It is believed that such a storage is in preparation for lactation. Hunscher and her associates [11] calculated that the net gain to the maternal organism during pregnancy can be 250 Gm. of nitrogen. The gain possibly varies in different persons between 200 and 400 grams.

During the puerperium the nitrogen balance of a woman shifts to the negative side, and this is due most likely to the loss incurred in the involutional process of the uterus and pelvic tissues. Lactation makes large demands on the remaining nitrogen stores, and the food intake of a nursing mother should contain an adequate amount of protein to supply both the maternal needs and the essential amino acids to be transferred in her breast milk for the growth of the child. The daily diet of the lactating woman should therefore include 1 quart of milk, two eggs and a large serving of meat, which will furnish approximately 84 Gm. of protein. The proteins from other items in a well balanced diet will usually suffice to bring the total protein intake to 2 Gm. of protein per kilogram of body weight in the average 56 kilogram woman.

Anemias of various types and degrees are frequent during pregnancy. Bethel, Gardiner and McKinnon [14] have described as a dietary deficiency anemia one in which the red blood cell count is below 3.5 million per cubic millimeter and in which the volume index is above 1.1, as contrasted with an iron deficiency type of

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anemia in pregnancy in which the hemoglobin falls below 10 Gm. per hundred cubic centimeters with a lowered mean corpuscular hemoglobin and a color index below 0.9. Such an anemia associated with inadequate food intake is regarded as a true macrocytic anemia, and in its more serious manifestations it is probably identical with the so-called pernicious anemia of pregnancy. Bethel and his associates found no such anemia when the daily intake of animal protein was above 50 Gm., but the incidence rose rapidly with the increasing deficiency of animal protein and reached 40 per cent of those studied when the daily animal protein intake was below 30 Gm. In the treatment of severe degrees of such anemia they suggest that the daily intake of animal protein should be adjusted to a compensatory high plane.

Arnell [6] broke down his series of 200 cases with regard to hemoglobin and found a progressive diminution in hemoglobin volumes as the protein intake in the diets decreased. Arnell points out that hemoglobin contains protein as well as iron and that a deficiency in either iron or protein usually means an inadequacy in the intake of the other, and probably many of these anemias were caused by long standing nutritional deficiencies in both factors. In all cases significant increases in blood values were followed by improvement in the animal protein content of the diet.

There has been a great deal of discussion on the relationship of protein in the diet to the toxemias of pregnancy. There have been two schools of thought on this subject. The first, holding the idea that a high protein intake was responsible for toxemia of pregnancy, has lost ground as the result of controlled clinical experiences. It has not been found that a high protein intake in the diet is capable of producing the specific toxemias of pregnancy. There is reason to believe, however, that where there is nitrogen retention, as in chronic renal disease, or where acute inflammatory processes, as in acute glomerulonephritis, are present, a modified protein intake is in order.

Strauss [15] has contended that a diet low in protein may be a cause of toxemia of pregnancy. He feels that with a dietary protein deficiency the fetus draws on the maternal organism for its dietary factors, including its protein precursors. If the mother's protein intake has been barely sufficient for her own economy, the depletion of her protein in the last trimester of pregnancy would be pronounced, using up the various protein reserves and finally the plasma protein.

When the plasma protein becomes depleted, the balance between the intracapillary hydrostatic pressure and the colloid osmotic pressure of the blood becomes disturbed. As a result an excess of extracellular tissue fluid, edema, presents itself, with a consequent disturbance in the electrolyte balance and a resulting inefficiency in the liver and kidney function, elevation of blood pressure and other signs of specific toxemias of pregnancy. Strauss feels that the development of true toxemia of pregnancy can be prevented by maintaining the pregnant woman's plasma proteins at a high level through adequate dietary protein and suggests an average of 130 Gm. of protein as an optimal amount in a balanced diet.

Dieckmann [16] and other observers do not believe that eclampsia or preeclampsia is due to a hypoproteinemia. Dieckmann states that he did not find any correlation between the serum protein concentration and the amount of edema. Only 16 per cent of preeclamptic and 12 per cent of the eclamptic women whom he studied showed a serum protein concentration at the edema level or lower, indicating that the edema in the majority of toxemic women was not occasioned by hypoproteinemia.

Harden [17] attempted to stabilize the protein intake against the maintenance needs and the urinary loss in a large series of preeclamptic patients. He had considerable success in preventing the occurrence of convulsions in his preeclampsias by this method of treatment. Dieckmann [18] states that the general experience is that loss of protein in the urine cannot be prevented by increasing the dietary protein intake.

It seems reasonably sure that pregnant women with liberal intakes of protein seldom develop the specific toxemia of pregnancy, although there may be cases in which the protein dietary adequacy alone may not prevent or cure. Kooser [19] found a median protein intake of 45 Gm. daily in one group of women among 4,000 obstetric patients of the Frontier Nursing Services in Kentucky. This must be regarded as a very low dietary intake of protein, and yet but 3 per cent incidence of all types of toxemia and 0.2 per cent incidence of eclampsia were observed.

Arnell and Guerriero [20] have discussed a group of women who had extreme edema during pregnancy associated with pronounced hypoproteinemia without signs of toxemia of pregnancy. The condition was considered as being due to a long continued protein malnutrition occasioned by inadequate dietary protein, in some instances in combination with deficiency in absorption and utilization of the ingested protein. They noted a diminution in the colloid osmotic pressure in the serum protein of these women and called attention to the influence of a high intake of sodium by the group. With a high protein diet which included parenteral protein in the form of plasma or whole blood these women quickly recovered. Plasma was regarded as more suitable than whole blood because it contains more protein in proportion, but transfusion was selected for cases which presented a complicating severe anemia.

Evidently a combination of factors is operative in hypoproteinemia, namely inadequate calories, ill balanced diet, ineffective protein ration and large fluid intake.[21] Probably an impairment of or injury to a specific mechanism for serum protein formation forms a large factor in the production of hypoproteinemia.[22] For the maintenance of normal plasma protein levels and prevention of edema, animal protein has been found to be twice as effective as vegetable protein.[23]

The interrelationship of protein with other dietary constituents is a complex problem. It is generally agreed that dietary proteins are used more economically and stored to better purposes when their digestion and metabolism are associated with those of carbohydrates. The nitrogen sparing action of carbohydrates is con-

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sidered to be superior to that of fat. A large number of small meals appears to be more effective in protein economy than the same amount of food distributed over two or three meals. It is believed that the level of dietary protein has little or no effect on the vitamin economy.

Of particular interest in the need for high supply and exceptional absorption of calcium in the reproductive processes are the recent experiments of McCance, Widdowson and Lehman.[24] They have shown that in the presence of a high protein intake 15 per cent of the calcium was absorbed as compared with an absorption of only 5 per cent in the case of a low protein diet. This probably means that the amino acids facilitate calcium absorption. As a result, in persons or races in which calcium intake is low or absorption poor a high protein diet may convert a calcium deficiency into sufficiency. This interrelationship should be significant in pregnancy.

Although many advances have been made in recent years in the artificial nutrition of newborn infants, the preference for breast feeding is still emphasized by pediatricians. Human milk should supply the infant with the indispensable components needed for growth.

The first step in ensuring an adequate supply of proper quality of breast milk must begin in pregnancy. An adequate intake of varied proteins is essential to provide for the growth of the breast and to permit it to withdraw sufficient amino acids for synthesis to form the particular protein characteristic of the mammary secretory elements. The specific protein whose hormonal action (prolactin) is necessary for the continued production of milk is also synthesized from amino acids.[25]

According to Tolley[26] it is improbable that milk protein arises from blood amino acids. Plasma proteins are probably utilized for the synthesis of caseinogen. The important source of milk proteins is some fraction of plasma protein which is estimated as globulin. The growth of the breast requires a storage of 17 Gm. of nitrogen.[10] Meigs[27] states that protein is the most important limiting factor for lactation in cows, the milk yield varying directly with protein intake. It is common practice in animal husbandry to feed protein in excess of maintenance requirements of pregnancy in preparation for lactation. The experiments of Richards[28] in experimental animals, whose basic diets were supplemented by milk ration, showed a higher proportion of young per litter reared than in a group receiving a basic diet alone. The importance of class A proteins, particularly milk proteins, in the diet of the nursing mother has been emphasized frequently.

The human infant in its early weeks consumes from 1 to 1.5 Gm. of nitrogen daily in breast milk, according to Macy and Hunscher.[10] The same observers have pointed out that in order to maintain nitrogen equilibrium in the lactating mother over the nitrogen requirements for maintenance there must be a daily intake of 2 Gm. of nitrogen for every gram of nitrogen in the milk. This high withdrawal rate usually leads to a negative nitrogen balance in the maternal organism. The deduction follows that 100 Gm. of protein in the diet of the lactating mother would be a sufficient intake. Others have recommended even higher allowances. Clinical observations on mammary secretion and infant weight gain with various types of diets brought the conclusion by Adair[29] that liberal protein feeding is of definite value in securing the maximum milk supply from nursing mothers.

Burke[3] recommends an intake of 2 Gm. of protein per kilogram of body weight for the lactating mother. The advantage of a high protein diet in promoting successful breast feeding has been demonstrated by Ebbs.[7] In a study of three groups of women with low income, dietary supplements of protein of high biologic value, milk, eggs and cheese were furnished to one group. The members of a second group were educated and encouraged to provide a good antepartum diet. These two groups were much more successful in nursing their infants than the mothers in the third group, who had been left on their poor antepartum diet. Breast feeding was considered successful in 95 per cent of those women with supplemented diet, 88 per cent in those educated to a good diet and but 81 per cent in the poor diet group. An interesting observation in connection with this study was the decrease in breast feeding when the supplemental foods were discontinued at the end of six weeks post partum. While mental attitude on the part of the mother may have had an influence in the decrease, it was felt that the sudden withdrawal of essential food factors had possibly altered the secretion and quality of the breast milk.

The history of large blood loss during menstruation or the occurrence of postpartum hemorrhage, of prolonged puerperal loss of blood from subinvolution or other obstetric complications or of a renal lesion or toxemia with pronounced albuminuria should be regarded as indicating increased protein intake if lactation is to be successful.

It should be remembered that if enough protein is not furnished in the maternal diet to supply both maintenance needs and the protein of the milk secreted a loss of maternal body tissue will occur. A high animal protein ingestion is necessary in lactation to supply liberally in the milk those proteins which cannot be synthesized in the body of the newborn.

There can be no doubt that increased intake of protein is essential for the well being of the pregnant woman and her unborn fetus. Her ability to produce suitable food efficiently for the newborn child depends greatly on the same material. Certain factors, such as economic, educational and social, are involved in her receiving an adequacy of this necessary food substance. At the present time employment of women in industry during pregnancy and the necessary governmental regulations on food rationing[30] may play a part in determining the quality and quantity of her protein needs and intake.

Just as the mother is instructed in the hygiene of pregnancy, so should she be individually instructed in the quantity and quality of food which she should eat. The importance of adequate protein in the diet should be explained, and sufficient instruction and financial assistance should be given to enable her to obtain it. The education of the pregnant woman in the basic principles of nutrition will redound to her own health, the well being of the baby and the benefit of her family as a whole.

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SATURDAY, APRIL 21, 1945

FERROUS VS. FERRIC IRON

Since the latter part of the seventeenth century it has been known that the red blood cell contains iron; this element forms part of the molecule of hemoglobin and with it is associated the remarkable ability of this pigment to carry oxygen. One of the most direct therapeutic technics is the administration of salts of iron in certain types of anemia; when the condition is due largely to low iron intake or to defective utilization of iron, and when a trace of copper is present, regeneration of hemoglobin follows such treatment. Once it was believed that iron in organic combination is superior to inorganic iron salts. Likewise the debate regarding the efficacy of ferric or trivalent iron salts like ferric ammonium citrate, as compared to that of ferrous or divalent iron such as is present in ferrous carbonate, has persisted. Part of the difficulty undoubtedly has arisen from the variation in criteria employed for judging the comparative behavior of the two types of iron salts; again certain of the experimental devices are doubtless rendered less reliable because of the difficulty in analyzing tissues for iron quantitatively.

Studies on the human being generally indicate that ferrous iron is superior to ferric iron. Thus the chloride and sulfate of ferrous iron were more effective in infantile anemia than ferric iron.[1] On the basis of increase in the iron of the serum, Moore and his associates [2] observed better absorption of ferrous iron than of the trivalent form. From the point of view of iron in nutrition, McCance and his co-workers [3] showed that ferrous iron was absorbed better than ferric iron and that the phytic acid in cereals interfered with the utilization of ferrous iron to a lesser extent than with ferric iron. Experiments with mice, rabbits and pigs have also been cited in favor of the superiority of ferrous iron.[4] Many studies with experimental animals, however, have indicated little, if any, superiority of one form of iron over the other on the basis of absorption.[5]

The dilemma with respect to the preference of one form of iron over the other in therapy seems to be cleared somewhat by the recent investigation of Moore and his associates,[6] in which radioactive iron was used as the indicator and the speed of its appearance in the circulation erythrocytes after a test dose was the criterion of utilization. In human subjects the divalent iron (ferrous) was distinctly superior, whereas in dogs no regular distinction between the two forms was demonstrated. Although ferrous iron is likely to be tolerated better by human patients than is the more soluble ferric salts,[7] there appears, from the most recent evidence with labeled (radioactive) iron, to be a real difference in the utilization of the two forms of iron in man. In experimental animals, on the contrary, the distinction seems much less obvious.

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WILHELM KONRAD ROENTGEN—THE CENTENNIAL OF HIS BIRTH—SEMICENTENNIAL OF THE X-RAYS

On March 27, 1845 Wilhelm Konrad Roentgen was born in Lennep, Germany. He received his early education in the Netherlands and then studied under Clausius, teacher of Willard Gibbs, in Zurich, Switzerland. At Würzburg he became assistant to Kundt. In 1874 he became privatdozent at Strasbourg University. In 1875 Roentgen was made professor of mathematics and physics at the Agricultural Academy of Hohenheim. He returned to Strasbourg in 1876, where he became extraordinary professor. In 1879 he was appointed ordinary professor of physics and director of the Physical Institute of Giessen, and in 1885 he became professor at Würzburg. Here in 1895, at the age of 50, Roentgen discovered the x-rays.

In 1895, while experimenting with a highly exhausted vacuum tube (Crookes) on the conduction of electricity through gases, he observed the fluorescence of a barium platinocyanide screen which happened to be lying near. Further studies disclosed that this radiation could pass through various substances which are opaque to ordinary light and could also affect a photographic plate. On Dec. 28, 1895 Roentgen [1] communicated his discovery of the x-rays to the president of the Physica-

1. Roentgen, W. K.: Ueber eine neue Art von Strahlen, Sitzungsber. d. physik.-med. Gesellsch. zu Würzburg, Dec. 28, 1895, p. 132 (English translation) Science **3**: 227, 726, 1896; Nature, London **53**: 274, 377, 1896 (English translation by Arthur Stanton). On page 376, A. A. C. Swinton says editorially "The discovery does not appear, however, to be entirely novel" and refers to prior work by Hertz and Lenard.

lisch-medicinische Gesellschaft of Würzburg. On Jan. 23, 1896 Roentgen for the first time publicly presented his discovery before the Physical Medical Society of the University of Würzburg. Kölliker suggested the name roentgen rays. For this discovery Roentgen received the Rumford medal of the Royal Society in 1896 jointly with Philip Lenard, who, with Hertz, showed that a portion of the cathode rays could pass through a thin film of a metal such as aluminum. In 1901 Roentgen received the Nobel prize for physics.

When attempts were made to credit his discovery to his assistant, Roentgen was deeply hurt and became accessible only to his students and a few friends. He died in Munich on Feb. 10, 1923.

The original discovery of the x-rays opened the way to many additional advances useful in the practice of medicine. In 1898 W. B. Cannon studied the movements of the stomach and in 1902 of the intestine in animals with bismuth. Between 1909 and 1912 Holzknecht, Haudek and Groedel popularized the use of the fluorescent screen and made the first good serial plates of the stomach in man. In 1923 and 1924 E. A. Graham and W. H. Cole devised roentgenography of the gallbladder.

William J. Morton, it is claimed by some, was the first American physician to make x-ray pictures. His book on "The X-Ray, or Photography of the Invisible, and Its Value in Surgery," in collaboration with E. W. Hammer, was published in 1896. Carl Beck published his work on "Roentgen Ray Diagnosis and Therapy" in 1904. Beck and Cannon were among the first to apply bismuth in x-ray studies. Beck was the first to use bismuth in the study of human disease, according to Arturo Castiglioni. Mention should be made of the books published by Pusey and Caldwell.[2]

Holzknecht and Kienböck introduced scientific dosage in 1900-1902. It was Albers-Schönberg, inventor of the compression diaphragm in 1902-1903, who devised the leaden chamber for the protection of operators from sterility. Perthes introduced high voltage therapy in 1903 and noted the effects of radiation on the growth of young animals. In 1913 Coolidge[3] introduced the Coolidge tube. Bucky[4] gave us the Potter-Bucky diaphragm.

The debt of medicine to roentgenology is vast indeed. What serious errors of omission and commission, what tragedies, have been avoided by use of the roentgen rays! How many unnecessary operations have been avoided! How many lives have been saved by prompt operations and the avoidance of delay and procrastination, because of the life saving aid in diagnosis, so often given by the roentgen rays! The centennial anniversary of Roentgen's birth and the semicentennial anniversary of his discovery (1895) of the x-rays are fittingly made an important event through celebrations by the gastroenterologic associations all over the world during 1945.

2. Pusey, W. A., and Caldwell, E. W.: The Practical Application of the Roentgen Rays in Therapeutics and Diagnosis, 1903, Philadelphia, W. B. Saunders & Co., 1903.

3. Coolidge, W. D.: Am. J. Roentgenol. **1**: 115, 1914. Glasser, Otto: The Genealogy of the Roentgen Rays, ibid. **30**: 349 (Sept.) 1933; Wilhelm Conrad Roentgen (with Margaret Boveri), Springfield, Ill., Charles C Thomas, 1934.

4. Bucky, Gustav: Arch. Roentgenol., London **18**: 6, 1914.

Current Comment

CHRONIC TOXICITY OF ERGOT

The chief source of ergot is rye infested with ergot ascospores. A cold wet season prolongs the period of infestation but reduces the yield of grain. The most recent extensive human epidemic of ergotism occurred in Russia after the cold wet summer of 1926. A mild epidemic occurred in Manchester, England, in 1928. Epidemics have not occurred in the United States. The clinical symptoms of ergotism are correlated with the amount present in the rye. Ergotism appeared whenever as much as 1 per cent was present in the rye; 7 per cent of ergot caused fatal poisoning. In addition to ergot other factors seem to be concerned in the production of ergotism. Animal experiments, though not conclusive, indicate that vitamin A deficiency increases the severity of the convulsive form of ergotism. In spite of early and great attention to the use of ergot medicinally, there has been no thorough investigation of the chronic effects of ergot on laboratory animals. Fitzhugh and his associates [1] demonstrated the influence of protein on a form of ergotism. They fed small amounts of ergot in different diets for the approximate lifetime of the rat. The experiments were performed on 20 female rats, which were started at 3 weeks of age on doses of 1, 2 and 5 per cent of ground crude ergot in a diet containing relatively high quantities of protein, and on a control group of 20 female rats. A second series of animals were started with the same levels of ergot but a low protein diet. There were 18 animals in each group and they were chosen at random with regard to litter mates. Each group contained an equal number of males and females. Ergot retarded the growth rate of the rats, and this effect was more pronounced in male animals during the early growing period. With an adequate diet the 1 and 2 per cent of ergot did not retard the growth of the female animals. On a low protein diet the growth rates, except for those of the female rats on the 1 per cent ergot, were significantly different from the controls. Histologically typical neurofibromas were produced on the ears of a high percentage of rats fed 5 per cent of ergot. The tumor occurred less frequently on the level of 2 per cent of ergot, rarely on a level of 1 per cent, and did not occur in the controls. A low protein diet somewhat favored the production of ear tumors. Tumors other than neurofibroma of the ear occur spontaneously in the older rats, and the incidence of these was about doubled in the rats that were fed ergot. Two other lesions, necrosis and calcification of the lower ends of

1. Fitzhugh, O. Garth; Nelson, A. A., and Calvery, H. O.: The Chronic Toxicity of Ergot, J. Pharmacol. & Exper. Therap. **82**: 364 (Dec.) 1944.

the renal pyramids, and corpus luteum hyperplasia of the ovaries were frequently caused by feeding of the ergot. Cutaneous gangrene or vascular lesions attributable to ergot were not observed. In a fractionation study whole ergot was less toxic than defatted ergot. Ergot oil caused little or no toxicity. There is an indication that the alkaloid ergotoxine may be slightly toxic in the amount found in 5 per cent of ergot. It slightly retarded the growth rate of rats during the early period. The exact constituent of the crude ergot responsible for the tumor production is not known. The fact cannot be ignored that 1 rat on the ergotoxine did develop a typical neurofibroma of the ear.

HANDBOOK OF PHYSICAL MEDICINE

From the Council on Physical Medicine of the American Medical Association has just come a new Handbook of Physical Medicine, representing a series of articles published in part in THE JOURNAL and covering for the general practitioner a review of the uses of physical medicine. This work, formerly published as the Handbook of Physical Therapy, is essentially a new contribution. It represents, however, twenty years of work by the Council on Physical Medicine of the American Medical Association. The purpose of this handbook is to bring the use of physical therapy more directly into the practice of general medicine, surgery and various medical specialties. The chapters cover the effects of heat, massage, body mechanics, exercise, occupational therapy, water, electrical energy and radiation on the body in general, with special articles covering fractures, infantile paralysis, psychiatric practice and dermatology. The revival of interest in physical therapy now demonstrated by the grants that have become available through the Baruch Committee on Physical Medicine and through the National Foundation for Infantile Paralysis adds special value to the convenient Handbook of Physical Medicine developed by the Council on Physical Medicine.

INACTIVATION OF MALARIAL PARASITES BY X-RAYS

The selective sensitivity of various diseased tissue to x-rays has important medical implications. Recently Bennison and Coatney [1] tested the sensitivity of some species of malarial parasites to x-rays. In vitro both the sporozoite and the trophozoite forms of an avian malarial organism were found to be sensitive to x-rays. Of the two, the sporozoite form could be more easily inactivated. While doses of x-rays of less than 10,000 roentgens do not cause inactivation of the trophozoite form, there was a somewhat increased survival time of infected chicks. Also there was a noticeable increase in time after injection of infected blood before the birds showed positive blood smears. With this sensitivity in mind infected birds were irradiated, and under the conditions used there was no significant change in the survival time. Plasmodium malariae was irradiated in vitro and this treated blood then injected into a patient suffering from syphilis of the central nervous system. In the following thirty-two days no symptoms of malaria developed and no parasites were found in the blood smears. It appears that the organisms had been completely inactivated under the conditions of irradiation. The subject was later treated with the unirradiated blood and developed typical malaria. The prolonged prepatent period and also the increase in survival time of the chicks receiving the irradiated organism suggests that some of the parasites were totally inactivated, thus leaving only a small number to initiate the infection. It is believed that the cells most sensitive to x-rays are those in the process of division. It may be possible to inactivate selectively the malarial organism while it is in the process of reproduction. This would be difficult with the avian strain used, since all stages of the cycle are present in the blood stream at one time. However, in the highly synchronous infections with Plasmodium malariae of man practically all the parasites at a given time are at the same stage of development and one of these phases may well be sensitive to x-rays.

1. Bennison, B. E., and Coatney, G. R.: Pub. Health Rep. **60**: 127 (Feb. 2) 1945.

METHYLENE BLUE TEST FOR URINARY BILIRUBIN

A sensitive test that would reveal the prejaundice stage of liver damage would be useful. In 1933 Fellinger and Menkes [1] described a method for the quantitative determination of bilirubin in the urine with methylene blue. The qualitative test as described by Myers [2] consists in adding two drops of Loeffler's methylene blue to 10 cc. of urine. The solution remains dark blue if negative but turns a brilliant green if positive. The test is immediate and is not changed by temperature or the acidity or alkalinity of the urine. It can be read in natural or artificial light. In determining the quantitative value of the methylene blue test a method of simple dilution of the urine was done routinely. To keep the volume at 10 cc., 1 cc. of urine was replaced by 1 cc. of water for the first dilution, 2 cc. of urine by 2 cc. of water for the second dilution, and so on until a negative test was obtained. In all cases in which positive methylene blue tests of the urine occurred, a serum bilirubin test was done immediately. Of the 59 cases of elevated serum bilirubin found among a group of employees exposed to tetrachlorethane, not one was found in which the methylene blue test of the urine was negative at the onset. The test was used on patients hospitalized for acute toxic hepatitis. Urine specimens were obtained each day on which a serum bilirubin test was done. The peak of the rise of bilirubin in the urine was present several days before the bilirubin in the serum reached its highest level. As improvement occurred, the urine became negative more promptly than the serum reached its normal level. More information is necessary to evaluate accurately the methylene blue test. Judging from the cases reported it is valuable in detecting early liver damage and thus avoiding further exposure to the toxic tetrachlorethane fumes.

1. Fellinger, K., and Menkes, K.: Quantitative Bilirubin Determination in the Urine with the Methylene Blue Method, Wien. klin. Wchnschr. **46**: 133 (Feb. 3) 1933.

2. Myers, Clyde P.: Use of Methylene Blue in Testing for Bilirubin in the Urine, J. Indust. Hyg. & Toxicol. **27**: 52 (Feb.) 1945.

MEDICINE AND THE WAR

ARMY

365,437 PRISONERS OF WAR IN THE UNITED STATES

The War Department recently announced that there were 365,437 prisoners of war held within the continental limits of the United States as of April 1: 311,630 German, 50,549 Italian and 3,258 Japanese. The prisoners are being held at 141 base camps and approximately 319 branch camps located in all sections of the United States. The branch camps are designed to place prisoners near current work projects. About 35,000 of the Italian prisoners of war were members of Italian service units directly engaged in war work. They contributed almost a million man days of work to the war effort during the month of March. Of the remaining war prisoners, an average of more than 43,000 were working on contract labor and more than 150,000 were working at Army, Navy and Air Corps posts, camps and stations. Additional prisoners were assigned to "housekeeping" duties within their own prisoner of war compounds, and the remainder of those not working were either hospitalized or officers or nonworking noncommissioned officers who cannot be forced to work under terms of the Geneva Convention.

Prisoners working on posts, camps and stations during March were employed principally in the laundries, in clothing and equipment, in warehouses, in quartermaster shops, in the maintenance of buildings, utilities, grounds and roads, in motor maintenance and repair and in bakeries and messes of American officers and enlisted men.

MEDICAL-SURGICAL CONFERENCE AT 300TH GENERAL HOSPITAL

Probably the largest military medical meeting ever held overseas was sponsored by the 300th General Hospital January 26-27 at the hospital in Italy. More than 600 officers attended, drawn from all over the Mediterranean Theater of Operations. The General Sessions, which were presided over by Col. George W. Reyer, commanding officer of the 300th General Hospital, were featured by addresses by Major Gen. Morrison C. Stayer, surgeon Mediterranean Theater of Operations; Brig. Gen. Joseph I. Martin, surgeon Fifth Army; Col. Frank Berry, surgical consultant Seventh Army; Col. Perrin Long, medical consultant Mediterranean Theater of Operations, and Lieut. Col. Tracy B. Mallory of the 15th Medical General Laboratory. The scientific sessions were divided into a medical and a surgical section, and each of these had programs running simultaneously composed of papers, lantern slide lectures, clinical demonstrations, ward rounds and reports of cases.

OPEN SCHOOL FOR WAC OFFICERS AT PURDUE

A school for Women's Army Corps officers assigned to administrative duties with WAC troops was recently opened at Purdue University, West Lafayette, Ind. Courses in personnel management and a study of the most successful administrative practices evolved in the various army commands to which Wacs are assigned is an important part of the school curriculum. Each class will attend the school for a two and a half week period. Ninety WAC officers, drawn from the various commands throughout the continental limits of the United States, have reported for each class.

Curriculum and training doctrine of the school will be under the supervision of the Personnel Division, War Department General Staff, and the school will be operated by the Fifth Service Command for the Commanding General of the Army Service Forces. Lieut. Col. Jessie Pearl Rice, Griffin, Ga., is commandant of the new school.

LIFE OF WHOLE BLOOD FLOWN TO EUROPE EXTENDED

Brig. Gen. Fred W. Rankin, director of the surgical consultants division of the Army Medical Department, recently stated that whole blood, one of the greatest single factors in saving lives of wounded soldiers, is now being flown to the European Theater of Operations under a new system of refrigeration which prolongs the life of this valuable fluid by about one third. Under this system whole blood is suitable for transfusions for a period of about twenty-one days. Expendable iced containers have been developed to keep the whole blood at the right temperature: not below 39 F. or above 50 F. The new system was inaugurated at New York and Washington, D. C. The whole blood is collected at Boston, New York, Brooklyn, Baltimore and Washington. About 1,200 pints a day will be flown to Europe.

ARMY AWARDS AND COMMENDATIONS

Captain Carl W. Gerardy

Capt. Carl W. Gerardy, formerly of Seagraves, Texas, was recently awarded the Bronze Star for meritorious service in connection with military operations from Jan. 1 to Dec. 31, 1944. Dr. Gerardy is a unit medical officer of the Ninth Air Force Service Command. The citation accompanying the award read, in part, "while serving with the Army of the United States, distinguished himself by operations not involving participation in aerial flight against an enemy of the United States during the period of Jan. 1, 1944 to Dec. 31, 1944. As surgeon of a service team Captain Gerardy was largely responsible for the low incidence of disease on the Air Force station. The devotion to duty, professional skill and superior achievement of Captain Gerardy as a team surgeon have been a material contribution to the service efficiency of his unit." Dr. Gerardy graduated from Baylor University College of Medicine, Dallas, in 1936 and entered the service in June 1943.

Captain Ernest D. Geever

The Bronze Star was recently awarded to Capt. Ernest D. Geever, formerly of Chicago. The citation read "for distinguishing himself by meritorious service in connection with military operations against an enemy of the United States from Dec. 6, 1944 to Jan. 20, 1945 in Germany and Belgium. As battalion surgeon, Lieutenant Geever performed his duties in a superior manner. Without hesitation and without an assistant, under the most adverse conditions of enemy action, weather and fatigue, he worked to provide the best medical care of the wounded. The professional skill, humanity and tireless devotion to duty displayed by this officer are in keeping with the finest traditions of the armed forces of the United States." Since the award was made, Dr. Geever has been promoted to captain. He graduated from the University of Illinois College of Medicine, Chicago, in 1943 and entered the service in January 1944.

Lieutenant Colonel Manuel E. Lichtenstein

Lieut. Col. Manuel E. Lichtenstein, formerly of Chicago, was recently awarded the Bronze Star. The citation indicated that "as chief of surgical service he efficiently organized the service and conspicuously directed its functions with outstanding professional skill." He also "demonstrated unusual ability as a teacher and was responsible for the superior training results attained." Dr. Lichtenstein graduated from Rush Medical College, Chicago, in 1925 and entered the service Oct. 15, 1942. He is now serving with the Michael Reese Hospital unit with the 5th Army in Italy.

Captain Earl W. Douglas

Capt. Earl W. Douglas, formerly of Portland, Ore., and now a flight surgeon with the Ninth Troop Carrier Command, was recently awarded the Bronze Star because of the courage and ability with which he has carried out his duties as dispatcher for the medical air evacuation of casualties from the western front to the great hospitals in England. The award was not made because of any one occasion of bravery but because, beginning with the beachheads of Normandy just after D day, Dr. Douglas has repeatedly gone into invasion fronts with attacking troops, helped set up evacuation tent hospital units at newly captured landing areas and directed evacuation of casualties under fire. Dr. Douglas graduated from the University of Oregon Medical School, Portland, in 1941 and entered the service Oct. 15, 1942.

Captain Gordon H. Haggard

The Legion of Merit was recently awarded to Gordon H. Haggard, formerly of Indianapolis, for "service as medical inspector of the 76th Infantry Division, Fort Meade, Maryland, from July to October 1942. His invention and original construction of models of simulated war wounds was used in the production of moulages adopted for use as a standard item of issue and has not only simplified first aid training but has increased the efficiency of army personnel in the application of medical aid." Dr. Haggard graduated from Indiana University School of Medicine, Indianapolis, in 1933 and entered the service March 27, 1941. He has been reported missing in action since October 1942 (THE JOURNAL, January 13, p. 95).

Lieutenant Colonel Howard A. Patterson

Lieut. Col. Howard A. Patterson, formerly of New York, has been awarded the Bronze Star "for coolness under fire and excellent performance of his duties on the Salerno beachhead." His unit was bombed from the air at Salerno and some members were killed. The citation accompanying the award told of his going ahead with a surgical operation while the bombing was in progress. Dr. Patterson graduated from Harvard Medical School, Boston, in 1925 and entered the service July 1, 1942.

Captain Robert S. Sherman

The Bronze Star was recently awarded to Capt. Robert S. Sherman, formerly of New York, "for meritorious service from June 10 to Nov. 1, 1944 as chief of the x-ray department of his evacuation hospital operating in France." Dr. Sherman graduated from Harvard Medical School, Boston, in 1935 and entered the service July 15, 1942.

NAVY

LST HOSPITAL SHIPS SAVED LIVES AT IWO JIMA

Four of the big LSTs at the invasion of Iwo Jima were transformed into floating medical evacuation stations within a few minutes after their amphibious tanks were launched. Remaining close inshore throughout the operation, wounded men were on their operating tables in some instances within twenty minutes after they had been hit. The four ships had been so loaded that all of their tanks would hit the water within seconds after their arrival on the line of departure. These tanks were for the first wave. Navy Medical Corps personnel rode to the operation aboard the "hospital LSTs." Operating tables set up in the troop quarters long before the island was sighted were soon ready. As the last "water buffalo" rolled down the ramp, cleaning crews went to work and before the first wave had reached shore the huge tank decks had been transformed into 150 bed hospital wards. The work of the doctors on the four ships was under the direction of Capt. Robert M. Gillette, formerly of Altadena, Calif.

EASTERN TUBERCULOSIS CENTER FOR NAVY

The Sampson Naval Training Center Hospital, Geneva, N. Y., has been chosen by the Bureau of Medicine and Surgery as the Eastern tuberculosis center for the Navy east of the Mississippi River. A similar center for the Western half of the country has been established at Corona, Calif. The Sampson center will have 200 beds. Dr. Jacob F. Heinrich will head the new department. On the staff also are Lieut. Comdr. W. C. Jensen and Lieut. Edward Rothstein.

NAVY AWARDS AND COMMENDATIONS

Lieutenant Stuart Clayton Knox

Lieut. Stuart Clayton Knox, formerly of Los Angeles, was recently awarded the Gold Star in lieu of the Second Silver Star. The citation accompanying the award read "for conspicuous gallantry and intrepidity during action against enemy Japanese forces in the initial stages of the landings at Empress Augusta Bay, Bougainville, Solomon Islands, on Nov. 1, 1943. When an artillery shell hit a landing boat and inflicted numerous casualties on the troops, Lieutenant Knox courageously directed and assisted in the removal of the injured to a position of safety despite sustained hostile mortar, machine gun and rifle fire. Quickly organizing a defense around the aid station, he skilfully ministered to the wounded, saving the lives of 2 critically injured men and alleviating the suffering of many others. Lieutenant Knox's personal valor and professional integrity, maintained at great personal risk, were in keeping with the highest traditions of the United States Naval Service." Dr. Knox graduated from the College of Medical Evangelists, Los Angeles, in 1934 and entered the service Oct. 16, 1942.

Lieutenant Warren Griffith Parish

The Navy Cross was awarded posthumously to Lieut. Warren Griffith Parish, formerly of Cleveland, "for extraordinary heroism while attached to the third marine division hospital at Gaum, Marianas Islands, during an attack by enemy Japanese forces on July 26, 1944. With the hospital subjected to a fierce and organized attack by hostile rifles, machine guns and mortars while he was performing a series of surgical operations on the woundetl patients under his care, Lieutenant Parish calmly and deliberately carried on in the face of bullets and fragments which continually penetrated his station. Only when this vital task had been completed and his patients evacuated did Lieutenant Parish leave his post to render further service by ministering to combat casualties and was himself mortally wounded while proceeding in front of our lines to assist another wounded man. His great personal valor and high professional integrity, maintained in utter disregard of all danger to himself, reflect the highest credit on Lieutenant Parish and the United States Naval Service. He gallantly gave his life for his country." Dr. Parish graduated from the University of Pennsylvania School of Medicine in 1933 and entered the service Aug. 6, 1942.

Lieutenant Commander James H. MacArt

The Legion of Merit was recently awarded to Lieut. Comdr. James H. MacArt, formerly of South Orange, N. J. The citation read "for exceptionally meritorious conduct in the performance of outstanding service as acting senior medical officer of a cruiser at the moment when magazines on an aircraft carrier blew up while the cruiser was alongside fighting fires. Although the only medical officer still alive on board the ship and faced with the necessity for the immediate care of a large number of critically wounded, he immediately organized corpsmen and volunteers to care for them. With energy, judgment and proficiency he supervised and administered this care. His coolness, executive ability and professional skill in the face of adversity were an inspiration to all. At all times his conduct was in keeping with the highest traditions of the United States Naval Service." Dr. MacArt graduated from Hahnemann Medical College and Hospital of Philadelphia in 1935 and entered the service June 16, 1942.

MISCELLANEOUS

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

(Continuation of list in THE JOURNAL, April 14, p. 996)

GEORGIA

Grady Memorial Hospital, Atlanta. Capacity, 720; admissions, 13,152. Mr. Frank Wilson, Superintendent (residents—medicine, surgery, urology, obstetrics-gynecology, ophthalmology-otolaryngology, discharged medical officers).

MICHIGAN

Eloise Hospital and Infirmary (William J. Seymour Hospital), Eloise. Capacity, 6,308; admissions, 4,394. Dr. T. K. Gruber, Superintendent (residents—medicine, surgery, ophthalmology-otolaryngology, July 1, disqualified for military service).

NEW YORK

Rochester State Hospital, Rochester. Capacity, 3,324; admissions, 657. Dr. J. L. Van De Mark, Director (residents—psychiatry, discharged medical officers and physicians disqualified for military service).

OHIO

Glenville Hospital, Glenville. Capacity, 135; admissions, 3,411. Mr. A. B. Harris, Superintendent (resident—mixed service, July 1, disqualified for military service).

WASHINGTON

Pierce County Hospital, Tacoma. Capacity, 239; admissions, 3,032. Mr. Burton A. Brown, Superintendent (2 interns, July 1).

RECORD ENROLMENT IN SCHOOLS OF NURSING

The National League of Nursing Education recently reported to the National Nursing Council for War Service that the number of students enrolled in state accredited schools of nursing in the United States had reached an all time high of 126,576 on January 1. In spite of the record total, however, the Nurse Education Division of the U. S. Public Health Service estimates—on the basis of Cadet Corps members enrolled—that 10,000 beginners must be recruited for June classes if this year's quota of 60,000 new students is to be met.

Enrolment by states and by service commands is detailed in the league report. New York, with 13,895, has the highest number of student nurses. Pennsylvania, with 13,588, is second. The third service command, made up of Pennsylvania, Maryland, Virginia and the District of Columbia, is first among the commands with 19,501 students. The second service command, which includes New York, New Jersey and Delaware, is second with 18,473.

A. M. A. MEMBER ON NURSING COUNCIL

The American Medical Association recently appointed Dr. F. H. Arestad, assistant secretary of the Council on Medical Education and Hospitals, to represent the Association as a member-at-large on the corporation of the National Nursing Council for War Service. Two other members-at-large were voted into the corporation. They are Major Julia G. Stimson, first chairman of the National Nursing Council, superintendent of the Army Nurse Corps during World War I, and former president of the American Nurses Association, and Miss Ruth Taylor of the Children's Bureau, U. S. Department of Labor.

193,000 PINTS OF BLOOD FLOWN TO WOUNDED

Combined figures on East and West Coast flights of whole blood to the war theaters reached 193,000 pints in March. Since the start of the blood flying program over the Atlantic last August 150,000 pints of whole blood has been flown from the east coast to the European theater. This service has made it possible for a wounded man to get blood within twenty-four hours after it has been drawn from a donor here. Shipments average about 1,200 pints a day, which provides transfusions for 300 to 400 average cases. Whole blood shipments being flown from the West Coast to the Pacific Ocean area have totaled 43,000 pints since the inauguration of the service last November.

Continued donations of type O whole blood are necessary to maintain this life saving service.

WARTIME GRADUATE MEDICAL MEETINGS

The following subjects and speakers for Wartime Graduate Medical Meetings have just been announced:

California

Hammond General Hospital, Modesto: Uremia Following Urologic Surgery, Dr. Donald Smith, May 2; Symposium on X-Ray Diagnosis, Medical and Surgical Treatment of Peptic Ulcer, Drs. Leon Goldman, Theodore Althausen and Earl R. Miller, May 15; Laboratory Aids in the Diagnosis of Disease, Dr. Jesse Carr, May 30.

Station Hospital, Hamilton Field: Early Postoperative Ambulation of Surgical Patients, Dr. H. Glenn Bell, May 2; Peripheral Nerve Injuries, Dr. Howard A. Brown, May 9; Fractures of the Extremities, Dr. Carl Anderson, May 16; Diagnosis and Treatment of Arthritis, Dr. Stacy R. Mettier, May 30.

Station Hospital, Camp Roberts: Diagnosis and Treatment of Arthritis, Dr. Hans Waine, May 19; The Treatment of Poliomyelitis, Dr. Henry D. Brainerd, May 26.

Station Hospital, Stockton Army Air Base: The Treatment of Syphilis, Dr. Norman N. Epstein, May 16; Use and Misuse of Endocrine Preparations, Dr. Ernest W. Page, May 30.

Oakland Area Station Hospital, Oakland: Diseases of the Thyroid, Dr. Mayo H. Soley, May 9; Diagnosis and Treatment of Hemorrhagic States, Dr. Paul M. Aggeler, May 23.

Kentucky

Station Hospital, Fort Knox: Malignancies in the Army Age Group, Dr. Danely P. Slaughter, May 2; Injuries of the Hand, Dr. Sumner Koch, May 2.

Nichols General Hospital, Louisville: Malignancies in the Army Age Group, Dr. Danely P. Slaughter, May 3; Injuries of the Hand, Dr. Sumner Koch, May 3.

Missouri

Station Hospital, Rosecrans Field: Allergy, Dr. Orval R. Withers, May 10; Disease of the Blood, Dr. C. J. Weber, May 10.

Nebraska

A. A. F. Regional Hospital, Army Air Field, Lincoln: X-Ray of the Gallbladder and Gastrointestinal Tract, Dr. James F. Kelly, May 1; Lesions of the Chest: Surgical Management, Dr. J. Dewey Bisgard, May 1; Benign Tumors of Bone, Dr. Robert D. Schrock, May 1.

New York

Induction Center, Grand Central Palace, New York: Common Allergic Manifestations, Dr. Joseph Harkavy, May 4; Deleterious Effects of Drug on the Hemopoietic System, Dr. Nathan Rosenthal, May 11 (to be repeated May 18); Deficiency States and Their Recognition, Dr. H. D. Kruse, May 25.

Pennsylvania

U. S. Naval Hospital, Philadelphia: Chemical Burns of the Eye, Dr. F. H. Adler, May 4; Health Department Military Liaison in Venereal Disease, Dr. Norman Ingraham, May 18.

West Virginia

Newton D. Baker General Hospital, Martinsburg: Neurosurgical Clinic, Dr. Charles Bagley Jr., May 7; Chemotherapy in Dysentery, Dr. Lay Martin, May 7; Narcosynthesis and Hypnosis, Dr. Addison McGuire Duval, May 21; Peripheral Vascular Diseases Due to Wartime Conditions, Dr. J. Ross Veal, May 21.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

April 16, 1945.

Congressmen Inspect Veterans Administration Hospitals

Every Veterans Administration hospital has been visited by one or more Congressmen since charges of maladministration were brought before Congress recently. The twenty-one members of the House Veterans Committee were asked by Chairman Rankin of Mississippi to constitute themselves individual investigating subcommittees, and other House members were urged to inspect hospitals in their jurisdictions. Inspections instigated by the Veterans Administration itself are under way by the American Legion, the Veterans of Foreign Wars and Disabled American Veterans, the three national veterans' organizations. They have sent twenty-seven questions to their posts throughout the country to be answered by visits to Veterans Administration facilities in their localities.

"Pilot Courses" in Diagnosis of Cancer Advocated

"Pilot courses" in diagnosis of cancer at medical schools throughout the country were advocated by the National Advisory Cancer Council meeting at the National Cancer Institute here. Council members emphasized the need of educating third and fourth year medical students to recognize cancer in its earliest stages. This was described as the first line of defense in cancer control. How to increase the number of cancer specialists in the country was discussed, along with a proposal that cancer specialists be appointed in each state to serve as consultants to surgeons in rural and urban areas. Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, reported that the Army would cooperate fully in sending news of Public Health Service fellowships in cancer study to surgeons with cancer experience in the armed forces.

Civilian Hospitals Have Million More Patients

An increase of a million in the number of patients admitted to civilian hospitals in this country was reported by Dr. Donald C. Smelzer, president of the American Hospital Association, when announcing May 12 commemoration of National Hospital Day. He reported that civilian hospitals are waging a two front war in a nation requiring their services at home and abroad, their record 54,000 hospital trained nurses and 60,000 hospital trained doctors, many thousands of technicians serving in the armed forces and admission of 12 per cent of the American population to community hospitals in 1944 for civilian hospital care. Dr. Smelzer said that despite a drop in the total number of voluntary hospitals the bed capacity in them had actually grown by several thousands. Shortages of personnel and supplies and the increased demand for hospital care had required patience and understanding from administrators and the communities. May 12 is observed as the 125th anniversary of the birth of Florence Nightingale, who initiated modern hospital practice.

Quarantine Lowers Deaths from Psittacosis

Quarantine regulations governing importation and interstate shipment of birds of the parrot family have caused a decline in the number of human deaths from psittacosis, or parrot fever, according to Dr. G. L. Dunnahoo and Brock C. Hampton of the U. S. Public Health Service. Stressing the importance of quarantine regulations, they point out that last June 113 mixed Amazon parrots and parrakeets entered quarantine at Brownsville, Texas. All but 3 of the birds died, and the virus of parrot fever was found in some of the bodies. Its presence was suspected in the rest from appearance of the spleen and liver. In a more recent shipment of 51 birds, 48 died while in quarantine at Brownsville. Studies by the National Institute of Health and the Hooper Foundation for Medical Research indicate that parrot fever caused the death of these birds.

Navy Segregates Physically Deformed Recruits

"Physical medicine" salvaged thirty-three recruit companies between last summer and March of 1945 at the U. S. Naval Training Center at Farragut, Idaho, according to a U. S. Navy announcement here. Medical officers reported that segregation of physically deformed recruits was a "most gratifying" experiment. During the experiment a definite decrease in the number of recruits medically discharged was reported. "We have no accurate estimate of the number of men we 'saved' but we are pleased with the results," reports Comdr. Leon O. Parker (MC), U.S.N.R., who as orthopedic consultant at Farragut worked out the segregation system with Lieut. Comdr. Joseph E. Wilson, U. S. Navy (retired), who was in charge of recruit training.

Senator Pepper's Remarks Included in Record

Need for cooperation in planning any national health program is stressed in remarks of Senator Claude Pepper incorporated in the *Congressional Record* from his speech earlier this year before the New York *Times* forum on public health and doctors. He said "Mapping of broad outlines of any national medical program is the job of government in consultation with the representatives of the American Medical Association and other professional societies, the trade union, business and consumer organizations, leaders of enlightened opinion and far sighted citizens. . . . Achievement of a national health program rests, in the last analysis, with the people themselves. They must want it and they must work for it."

Purer Forms of Penicillin Reaching Market

Purer forms of penicillin are now reaching the market, causing less pain through injection in muscle tissue, according to Food and Drug Administration doctors Henry Welch, R. P. Herwick and A. C. Hunter. They state that many laboratories are producing penicillin that is five times as powerful and thus purer than the drug obtained earlier in production. Fred J. Stock, chief of the Drugs and Cosmetics Branch of the WPB Chemical Division, says that three or four times as much penicillin will be produced this year. Controls over the sale of preparations of penicillin in pills, tablets, ointments or solutions are urged by Dr. R. P. Fischelis, secretary of the American Pharmaceutical Association.

Public Hearings Slated on Bill to Ban Animal Experimentation

Public hearings will be held soon on the bill of Representative Lemke, Republican of North Dakota, to prevent animal experimentation in the Capital, according to Chairman Jennings Randolph of the House District Committee. In response to a petition from Mr. Lemke, Mr. Randolph said he would request that early hearings be conducted by the subcommittee headed by Representative McGehee, Democrat of Mississippi, to whom the measure has been referred.

Nurse Draft Bill Unlikely to Be Passed

President Truman's inauguration is believed to be one factor that will bar action on the nurse draft bill. He is known to be most sympathetic to labor, and it is considered likely that he will discourage agitation for manpower legislation. The nurse draft bill measure itself, which passed the House and is now on the Senate calendar, has already been given little chance of passage because of the Senate's rejection of compulsory manpower controls.

Capital Notes

Dr. R. H. Riley, director of the Maryland State Department of Health, announced here that public health nurses "necessary to the maintenance of minimum health services in their communities have been classified as in essential service." He lauded nurses who stay at home "to carry on a minimum public health program."

Col. William C. Menninger, director of the Neuropsychiatry Consultants Division of the Army Medical Service, addressed a forum on mental health of the Washington Metropolitan Health Council, telling of his work in connection with the mental health of the seven million men in the United States Army. District Health Officer George C. Ruhland summarized mental health plans for the district.

The role of whole blood, plasma and plasma fractions in war medicine was described by Capt. Lloyd R. Newhouser (MC), navy plasma expert, in the annual Kober Foundation lecture at Georgetown University. Formerly on the Naval Medical School staff and now awaiting secret orders, Captain Newhouser was for several years in charge of the blood substitute and penicillin program for the Navy Medical Corps.

Washington led national observances during the first week of April of National Negro Health Week, started forty-one years ago by Booker T. Washington, noted Negro educator. Sponsored by the U. S. Public Health Service with the motto "A healthy family in a healthy home," the program is assisted by the National Negro Health Movement, year round service which acts as a health information clearing house. The program emphasizes the benefits of cleanliness, hygiene and individual and community sanitation.

The first attempt to export penicillin without a license in violation of the Export Control Act was reported here to have occurred in Laredo, Texas, where a customs patrol seized 2,000,000 units of penicillin.

President Basil O'Connor of the National Foundation for Infantile Paralysis, Inc., announces that scholarships for training in physical therapy under the $1,267,000 program of the foundation are available immediately for classes beginning in June and July.

Antepartum examinations for syphilis are required in four more states, Arizona, Montana, Oklahoma and West Virginia. This brings to thirty-four the number of states taking this step to prevent transmission of syphilis to unborn children by requiring antepartum examinations.

The National Association of Chiropodists will observe Foot Health Week, June 8-16, when it will endeavor "to focus public and military attention on proper foot care to prevent foot troubles before they happen."

The War Production Board has directed the return to production of all looms that produced bandage cloth in 1943, to provide cotton cloth for military and surgical bandages and food processing needs.

The critical situation in the staffing of Washington hospitals was the subject of newspaper headlines here. The twenty-seven metropolitan area institutions were reported to have 497 job vacancies. An appeal has been made to the War Manpower Commission for a higher employment rating.

"Epidemic breeding" conditions in restaurants caused by wartime scarcity of garbage cans, toweling, vitrified china and flatware has prompted the WPB to consider giving eating places higher priorities on these articles.

A Council of Social Agencies Committee is speeding plans for establishment of a clinic here to provide treatment instead of sentences for heavy drinkers.

Eliminating Washington slums and rehousing their occupants was described as the "key" to the Capital's health problem by Commissioner Guy Mason before the public health subcommittee of the House District Committee.

Eugene Meyer, editor and publisher of the Washington *Post*, was presented by President Truman (as Vice President) with the annual award of the Corrections Division of the Council of Social Agencies for what War Mobilizer Fred Vinson described as Mr. Meyer's interest in "the welfare of the people."

Society Proceedings

COMING MEETINGS

New Hampshire Medical Society, Manchester, May 15. Dr. Carleton R. Metcalf, 5 S. State St., Concord, Secretary.

Rhode Island Medical Society, Providence, May 16-17. Dr. William P. Buffum, 122 Waterman Street, Providence 3, Secretary.

South Dakota State Medical Association, Watertown, June 3-5. Dr. Roland G. Mayer, 22½ S. Main St., Aberdeen, Secretary.

Council on Medical Service and Public Relations

NORTHWEST MEDICAL SOCIETIES MEET • MEDICAL CARE PROBLEMS

How medical organizations of the Northwest have taken leadership in meeting the demand for prepayment medical care through their own medical and hospital service plans was explained at a regional conference of the Council on Medical Service and Public Relations held April 7 at the Multnomah Hotel, Portland, Ore. The day preceding the conference representatives of the Council and other members of the American Medical Association staff visited Permanente, the hospital being operated on a prepayment basis by the Kaiser Foundation to take care of the employees and their families of the Kaiser ship yards at Vancouver, Wash.

Officers and members of public policy, public relations and medical economic committees from the states of Oregon, Washington, Idaho, California, Montana and Alaska attended the conference and discussed many problems having to do with the broad question of medical care and public relations.

Unlike many other sections of the country, the problem of prepayment medical and hospital care is not a new question in the Northwest. Twenty years or so ago the first plan on the insurance principle was sponsored by physicians in the state of Washington and at the present time seventeen local groups held together by a statewide plan sponsored by the Washington State Medical Association serving 230,000 persons is in operation. The program functions a bit differently in Oregon. Whereas the groups in the state of Washington are federated through a central statewide committee and have a large degree of autonomy, Oregon Physicians Service is more like Michigan Medical Service in its overall state coverage.

Relationship with the Blue Cross differs from the situation in regard to hospital service generally existing throughout the country. In Washington and Oregon, where medical service plans were established before Blue Cross and cover the hospital as well as the medical field, the medical groups are loath to give up their control over any of the field to Blue Cross. This is a most interesting point in light of the situation in some places where conflicting views are developing as a result of aggressive movement by Blue Cross to supply medical as well as hospital service.

Permanente enters the discussion whenever any question of postwar medical care arises. In addition to serving the workers and families of the Kaiser organization, its facilities are open to any one who may desire to come to the hospital for treatment. Its staff consists of 45 physicians and about 130 nurses, all on a salary basis. It is one of the medical establishments of the Kaiser Foundation under the direction of Dr. Sidney Garfield. The usual question is What is going to happen to Permanente and to other Kaiser medical facilities when the war ends and ship building slows down or stops? Dr. J. W. Neighbor, medical director of Permanente, expressed the hope that following the war Permanente may receive the approval of the Washington State Medical Association to continue. Whatever may become of Permanente, there is no doubt that its creation and its methods will have much influence in the blue prints of plans for medical care.

Estimates of the quality of medical care actually received by Permanente patients differ greatly. Those connected with the organization naturally rate it as superior, while others do not feel that the type of medical care rendered at Permanente is up to the high standard claimed and point to the rapid turnover of the group's medical personnel as one of the reasons why such claims of superior service are exaggerated. The overhead daily cost per bed for Permanente is $15 according to hospital officials, while it is much lower for regularly established institutions in the same locality. Permanente officials state that this relatively high figure is due to the fact that the doctors of Permanente have their equipment centralized in the hospital and that patients are transported to the hospital rather than the doctor having to go to the patient.

Dr. John Fitzgibbon, Chairman of the Council, presided at the meeting. Among those who spoke were Dr. Edward J.

McCormick, vice chairman of the Council, Toledo, Ohio; Dr. Blair Holcomb, president of the Multnomah County Medical Society, Portland, Ore.; Dr. Dwight Murray, Napa, Calif.; Dr. R. L. Zech, president of the Washington State Medical Association, Seattle; Dr. E. H. McLean, president of the Oregon State Medical Society, Oregon City, Ore.; Dr. J. C. Shields, Butte, Mont.; Dr. Leslie S. Kent, Eugene, Ore.; Dr. Homer Dudley, Lewiston, Ida.; Dr. Frank R. Mount, Portland; Dr. Gordon B. Leitch, Portland; Dr. Richard B. Adams, Portland, and Dr. Morris L. Bridgeman, Portland.

Among the representatives of the American Medical Association were Mr. J. W. Holloway Jr., Director of the Bureau of Legal Medicine and Legislation; Dr. Carl M. Peterson, Secretary of the Council on Industrial Health; Dr. Joseph S. Lawrence, Director of the Washington Office of the Council, and Mr. Thomas A. Hendricks, Secretary of the Council.

Bureau of Information

IOWA AND OHIO COUNTY REPORTS

Iowa, through Dr. Robert L. Parker, secretary of the Iowa State Medical Society, and Ohio, through Mr. Charles Nelson, executive secretary of the Ohio State Medical Society, have returned completed summary sheets for several counties.

The following table presents some of the data on the three counties from each of these states. The column giving the number of persons per telephone is used as one index of the economic status of the area. Many physicians over 65 years of age are carrying on large practices and are doing much to maintain the health of communities. They are not included in computing the physician population ratio, however, as the future needs of the communities will be largely dependent on younger physicians.

County [1]	Principal Cities [2]	Population	Physicians Under 65	Persons per Physician	Persons per Telephone [3]
IOWA					
Decatur		11,717	3	3,906	7.3
	Leon	2,307			
Keokuk		15,487	4	3,872	3.8
	Sigourney	2,355			
Lyon		13,191	4	3,298	6.2
	Rock Rapids	2,556			
OHIO					
Clark		100,466	46	2,184	9.5
	Springfield	70,662			
Gallia		21,940	6	3,657	18.9
	Gallipolis	7,832			
Muskingum		64,947	30	2,165	7.7
	Zanesville	37,500			

1. Bureau of Census, estimated population 1943.
2. Bureau of Census, population 1940.
3. Based on 1940 figures, Am. Tel. & Tel. Co.

When filled out the section on the Summary Sheets headed "Remarks" is particularly useful. For example, it was reported on a county summary sheet that at least one general practitioner was needed in Roseville (population 3,000) in Muskingum County, Ohio. The nearest practicing physician to Roseville is in Crooksville, which is not easily accessible. Information like this, which is more complete than shown with tables, is available to inquiring medical officers.

With the information available on a completely filled out summary sheet it is readily possible for an interested medical officer to make an initial selection of areas in which he might like to practice. The further investigation through the state and county medical societies is thus greatly facilitated, and much unnecessary correspondence and perhaps travel may be avoided. In many communities vacancies are being held open for physicians now in military service. The number of physicians listed may therefore be misleading and consequently direct correspondence with the county medical society will always be necessary.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Changes in Status.—The House Committee on Rules has heard testimony from Representative O'Toole in support of his resolution authorizing an investigation into the achievements of Sister Elizabeth Kenny, H. Res. 201. It is reported that the chairman of the Committee, Representative Sabath, Illinois, will request Sister Kenny to appear before a special meeting of the committee. H. R. 2348 has been reported to the Senate, a bill to bring within the purview of federal narcotic laws certain drugs found to have an addiction-forming or addiction-sustaining liability similar to morphine or cocaine.

Bills Introduced.—S. 852, introduced by Representative Johnson, Colorado, proposes to increase from $100 a month to $125 a month the rate of pension for veterans of the Civil War and of the war with Spain who are blind or helpless or so nearly blind or helpless as to require regular aid and attendance. S. 855, introduced by Senator Vandenberg, Michigan, proposes to extend the rehabilitation and educational benefits under Veterans' Regulations to citizens of the United States who served in the military or naval forces of any allied government. H. R. 2827, introduced by Representative McDonough, California, proposes to authorize the release of persons from active military service and the deferment of persons from military service in order to aid in making possible the education and training and utilization of scientific and technologic manpower to meet essential needs both in war and in peace. H. R. 2860, introduced by Representative Mundt, South Dakota, provides that the Veterans Administration facility under contract for construction at Sioux Falls, S. D., shall be designated as the Royal Johnson Memorial Veterans' Hospital.

DISTRICT OF COLUMBIA

Changes in Status.—S. 125 has been reported to the Senate providing that funds collected by the District of Columbia examining, licensing and other boards and commissions shall be paid to the Collector of Taxes and by him deposited in the United States Treasury to the credit of the District of Columbia. S. 463 has been reported to the Senate, specifically authorizing a court to commit to Gallinger Municipal Hospital for examination and observation any defendant in a criminal case where the court feels, from the prima facie evidence before it, that the defendant is of unsound mind. If after examination and observation the psychiatric staff of the hospital reports that the defendant is of unsound mind, the court may then proceed to impanel a jury to inquire into the mental condition of the defendant.

Bills Introduced.—H. R. 2839, introduced by Representative Randolph, West Virginia, proposes to increase the salary of the executive secretary of the Nurses' Examining Board of the District of Columbia.

Official Notes

DOCTORS LOOK AHEAD

During the next three weeks Doctors Look Ahead will present the following programs:

April 21. Cancer, with special reference to education for youth. Dr. Frank L. Rector, cancer consultant, Michigan Department of Health, will be the speaker.

April 28. Battle Fatigue. Speaker, Major Gen. George F. Lull, Deputy Surgeon General, United States Army, speaking from Washington, D. C. This program only will be broadcast from 1 to 1:30 p. m. Eastern War Time instead of at the regularly scheduled time.

May 5. Child Health. Speaker, Dr. George K. Anderson, Secretary, American Medical Association Council on Foods and Nutrition.

Doctors Look Ahead is heard on one hundred and twenty-three stations of the National Broadcasting Company network each Saturday at 4 p. m. Eastern War Time (3 p. m. Central War Time, 2 p. m. Mountain War Time and 1 p. m. Pacific War Time). Some stations may record the program and broadcast it at a time which suits their schedule better. Local newspaper radio announcements should be consulted.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

New Appointments at University of Alabama.—Dr. Roy R. Kracke, dean of the Medical College of Alabama, Birmingham, announces the following appointments:

Dr. Ray O. Noojin Jr., instructor in dermatology and syphilology, Duke University School of Medicine, Durham, as associate professor of medicine in the department of medicine, and chief of the division of dermatology and syphilology, effective September 1.

Alan Hisey, Ph.D., associated with the department of biochemistry, George Washington University School of Medicine, Washington, D. C., as assistant professor of biologic chemistry, effective September 1.

Miss Mary Ament, formerly librarian at Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, as librarian, effective April 1.

CALIFORNIA

City Loses in Hospital Case.—On February 7 Municipal Judge Daniel R. Shoemaker, San Francisco, handed down an opinion to the effect that persons receiving hospitalization in San Francisco public hospitals are not liable for the cost thereof unless an investigation is made by proper authorities as to their ability to pay, according to *California and Western Medicine*. The decision was rendered in the case of the city against a Mrs. William Perry, who was treated at San Francisco Hospital and subsequently billed for services. The court rendered a verdict in favor of Mrs. Perry, including her costs in the action. "No evidence was offered of any action by the board of supervisors, as required by the welfare and institutions code, as to whether any investigation was made, or finding, or determination as to the pecuniary ability of defendant to pay, or her other family responsibilities."

The George Dock Lecture.—Dr. Willard Lee Marmelszadt, resident at the Queen of Angels Hospital, Los Angeles, and winner of the William Osler Medal for the best essay on a medical historical subject by a student of medicine, delivered the fourth annual George Dock Lecture April 5 under the auspices of the Barlow Society for the History of Medicine. His subject was "The Musical Sons of Aesculapius," the same theme which won him the Osler Medal (THE JOURNAL, February 3, p. 286). The lecture was created by the Barlow Society four years ago in celebration of Dr. Dock's eightieth birthday. This year, although Dr. Dock's eighty-fourth birthday fell on April 1, the observance was held April 5. In an announcement the *Bulletin* of the Los Angeles County Medical Association stated that, although the absence of many of the members of the Los Angeles County Medical Orchestra has led to its disbanding, many of those still remaining are active in small groups as trios and quartets.

DISTRICT OF COLUMBIA

Personal.—Dr. George B. Roth has been made professor emeritus of pharmacology at the George Washington University School of Medicine, where he has been a member of the faculty since 1924.——Mr. Leo G. Schmelzer has been appointed superintendent of the new George Washington University Hospital, Washington, effective March 15. He will supervise the building and equipment of the hospital and will assist Dr. Walter A. Bloedorn, dean of the university medical school, who has been appointed medical director of the hospital. The new hospital is being built by the federal government for the use of the university to meet the needs of the wartime emergency in Washington. The 400 bed structure, which will be equipped and managed as a "teaching hospital," replaces an older building in use since 1898. The George Washington University School of Medicine, whose faculty will control the hospital, was opened in 1825 and is the eleventh medical school in the country in order of founding.

Postgraduate Course.—The eighth annual postgraduate course in ocular surgery, pathology and orthoptics of the George Washington University School of Medicine, Washington, will be held Monday May 28 through Saturday June 2. The registrants will perform operations on animal eyes under the direction of Drs. Ernest A. W. Sheppard, Edgar Leonard Goodman, Ronald A. Cox, Richard W. Wilkinson, Sterling Bockoven, Carmon R. Naples and Jonathan B. Peebles Jr. as instructors. Operations to be performed will be combined intracapsular cataract extraction, Elliott's sclerocorneal trephine, cyclodialysis, Lagrange iridectomy, iridotasis, iridencleisis, Jameson recession, Reese resection, Worth advancement and O'Connor cinch. A course in pathology embraces normal histology of the eye; inflammations, general and specific; phthisis bulbi, glaucoma; cataract; arteriosclerosis, albuminuric retinitis; intraocular and epibulbar tumors. Instructors will include Col. James E. Ash, M. C., Capt. Joyce M. S. Morris, M. C., Helenor Campbell Wilder and Lawrence Ambrogi, of the Army Institute of Pathology. Orthoptics and ocular motility will be conducted by Dr. Sheppard, Dr. Frank D. Costenbader, Louisa Wells, Mary E. Kramer, Dorothy R. Bair, Mildred Brown and Alice L. McPhail, resident staff of the department of ophthalmology.

ILLINOIS

Physician Wins Prize on "Never Too Old" Program.—Dr. Charles A. Runyon, Carthage, recently received a wrist watch as a gift of the Art Baker Hollywood program "Never Too Old," which is dedicated to older professional men and women who are continuing their services to the public. Dr. Runyon, who graduated at the College of Physicians and Surgeons, Keokuk, Iowa, in 1884, has been practicing in Elvaston and Carthage nearly sixty-two years. The program which recognized him was heard over MBS February 16.

Chicago

Dr. Bevan's Bequests.—An inheritance tax appraisement listing net assets of $1,540,827 in the estate of the late Dr. Arthur Dean Bevan was submitted April 10 to County Judge Perry L. Persons of Lake County. Presbyterian Hospital, where Dr. Bevan was chief surgeon for many years, will receive $975,247, Rush Medical College $113,884 and Lake Forest Hospital, Lake Forest, Ill., $25,000, it was reported.

Lying-In Hospital to Observe Fiftieth Anniversary.—A fiftieth anniversary campaign for Chicago Lying-In Hospital of the University of Chicago is being undertaken by its board of directors. Mrs. Kellogg Fairbank is chairman of the committee in charge of fund raising, with offices at room 718, People's Gas Building, 122 South Michigan Avenue, Chicago 3. Mrs. Josephine Patterson Reeve will handle publicity pertaining to the campaign through this office.

Faculty Changes at Loyola.—Dr. Louis G. Hoffman, a member of the faculty of Loyola University School of Medicine since 1934, has been appointed acting chairman of the department of ophthalmology. He succeeds the late Dr. Carl F. Schaub. Dr. Hoffman graduated at Northwestern University Medical School in 1910. Dr. Samuel Salinger, professor of otorhinolaryngology and a member of the faculty since 1917, has been named acting chairman of the department of otorhinolaryngology, succeeding Dr. George T. Jordan, who is now professor emeritus.

IOWA

Diamond Jubilee of State Medical School.—The *Journal of the Iowa State Medical Society* for April was dedicated to the State University of Iowa College of Medicine, Iowa City, which this year is celebrating its seventy-fifth anniversary. The school was established in 1869 under the leadership of the late Dr. William F. Peck, Davenport, with the name Department of Medicine in the State University of Iowa. The first class was graduated in 1871. It is hoped to celebrate the anniversary September 27-28 with special clinics. The issue also commemorates the third consecutive annual number, in which all of the scientific articles have been prepared by the faculty of the college of medicine. In addition, it observes the fiftieth anniversary of the first preparation of diphtheria antitoxin in Iowa. The work was carried on in the department of pathology in the state university by Dr. Walter L. Bierring, Des Moines, now state health officer. An article entitled "The Modern Treatment of Diphtheria, with Demonstration of Method of Preparing Antitoxin," was presented at the annual meeting of the state medical society in Creston in April 1895. In the anniversary number of the state journal Dr. Bierring discusses "The Control of Diphtheria After Fifty Years."

KANSAS

Personal.—Dr. William L. Speer, Osawatomie, has been named Miami county coroner to fill the term of Dr. Benjamin L. Phillips, Paola, who resigned because of ill health.——Dr. Patrick S. Brady, Hays, has been named health officer of Ellis County, succeeding Dr. Gardner A. Surface, Ellis.

Division of Cancer Control to Be Created.—The 1945 session of the Kansas State Legislature has appropriated funds which make possible the establishment of a division of cancer control in the Kansas State Board of Health. For the first time in the history of the state an official public health program will be instituted to reduce needless deaths from cancer.

Paul Ensign Named Director of Maternal and Child Health.—On March 1 Dr. Paul R. Ensign, formerly assistant director of the division of maternal and child health, Kansas State Board of Health, was appointed director of the division, according to the *News Letter* of the state board of health. Dr. Ensign, who graduated at Northwestern University Medical School, Chicago, in 1936, served for three years as assistant health officer and pediatric consultant in Hancock County, Ga., the project serving as a demonstration center. Dr. Ensign left this appointment to become assistant director of the Kansas division and after a year and a half accepted an appointment as city-county health officer, Boise, Idaho.

KENTUCKY

Graduate Extension Course.—The Kentucky State Medical Association will continue its postgraduate extension course that it has been conducting for the past two years under the direction of Dr. William W. Nicholson, Louisville. Lectures will be given in Richmond, May 3 and May 10, the first group to be presented by Drs. Richard T. Hudson, Bruce B. Mitchell, Edwin Paul Scott and Marion F. Beard and the second by Drs. Russell E. Teague, Frank A. Simon, Percy S. Pelouze and Major Francis W. Hetreed, M. C. On May 17 and 24 the course will be conducted in Berea, the first day's program to be presented by Drs. Joseph Garland Sherrill, Winston U. Rutledge, Maurice G. Buckles and Morris M. Weiss and the second by Drs. Foster D. Coleman, Alice D. Chenoweth, Earl R. Gernert and Charles H. Maguire. All except Dr. Pelouze, who is from Philadelphia, are Louisville physicians.

MISSOURI

Robert James Named State Health Commissioner.—Dr. Robert M. James, Joplin, on March 21 was appointed state health commissioner and secretary of the state board of health by Governor Phil M. Donnelly. Dr. James is one of the members recommended to the governor for consideration. He graduated at the St. Louis University School of Medicine in 1904 and was president of the Jasper County Medical Society in 1939.

Personal.—Dr. Leonard M. Folkers is now chairman of the division of health education, Stephens College, Columbia, succeeding Dr. Florence I. Mahoney, who has joined the University of Wisconsin, Madison, according to the *Journal-Lancet*. ——Dr. B. Albert Lieberman Sr. on March 29 completed fifty years in the practice of medicine in Kansas City.——Dr. William V. McKnelly, Chamois, has been appointed physician to the state penitentiary at Jefferson City.——Dr. John Zahorsky, St. Louis, was made president emeritus of the Bethesda General Hospital recently when he resigned as president after having been head of the institution for twelve years.

Medical Service Plan Launched.—On March 11 the Missouri Medical Service announced that the medical and surgical care plan sponsored by the Missouri State Medical Association has been launched (THE JOURNAL, July 22, 1944, p. 859 and Oct. 14, 1944, p. 445). According to the *Journal of the Missouri State Medical Association* Surgical Care, Inc., of Kansas City, now in its second year of operation, is caring for more than 32,000 persons in the western part of Missouri. Arrangements currently worked out by the two Blue Cross plans, which are handling the enrolment and other administrative matters for both of the plans, are such that every county in the state eventually will be covered. Missouri Medical Service, in conjunction with the St. Louis Blue Cross plan, will handle enrolment of subscribers in the section of the state now serviced by St. Louis, while Surgical Care, Inc., in conjunction with Kansas City Blue Cross, is handling enrolment in Kansas City, St. Joseph and nineteen other counties in the northwest section of the state.

NEW YORK

Aid to Alcoholic Addicts.—A project is under way in Rochester to establish a center for aid to alcoholic addicts patterned after the Yale clinic on alcoholism, the Rochester *Times-Union* reported, March 2. A committee of physicians and representatives of interested citizens' groups, in charge of Dr. Edwin Fauver, Rochester, is considering the project.

Appropriations Cover Medical Construction.—An extensive building and expansion program is planned for the Rochester and Utica state hospitals for the mentally ill as soon as the exigencies of the war will permit. Plans call for a group of interconnected buildings at each institute. One unit will be for patients with physical ailments in addition to their mental condition, another will be for shock therapy treatments and another will be for new patients. There will be also a medical surgical building where will be concentrated an operating suite, laboratories and diagnostic clinic. Numerous auxiliary buildings will be constructed also.

Arthur Johnson Honored.—The Medical Society of the County of Monroe gave a dinner at the Powers Hotel March 31 in honor of Dr. Arthur M. Johnson, retiring health officer of Rochester (THE JOURNAL, March 3, p. 534). In 1943 the Rochester Academy of Medicine presented to him its highest award, the Albert D. Kaiser Medal, for "outstanding service to the medical profession." In addition to Dr. Johnson the speakers at the recent dinner were:

Dr. Benjamin J. Slater, Rochester, Medical Society of the County of Monroe, chairman.
Hon. Samuel B. Dicker, mayor, city of Rochester.
Alan Valentine, LL.D., Rochester, president, University of Rochester.
Thomas Parran, Surgeon General of the U. S. Public Health Service.
Dr. Stearns S. Bullen, Rochester, president, Medical Society of the County of Monroe.

Clothing Workers Receive Hospital Insurance.—Free hospitalization insurance will be extended to 11,000 clothing workers in Rochester, May 1, according to the Rochester *Times-Union*, March 28, as the result of an industry-wide agreement between the manufacturers and the Amalgamated Clothing Workers of America. Throughout the industry the insurance will cover 150,000 men and women clothing workers. The hospitalization program is an extension of the life insurance program instituted under a similar industry-labor agreement in July 1943 and a life and accident policy started last February, it was reported. Without cost to the employee, the hospitalization plan provides payment of $5 a day up to a maximum of thirty-one days for illness in any consecutive twelve months; a separate payment of $5 a day for a maximum of thirty-one days for hospitalization resulting from an accident, also within any twelve consecutive months; an additional payment up to $25 for expenses incidental to hospitalization, and a flat $50 maternity payment.

New York City

New Professor of Neurologic Surgery at Columbia.—Dr. Leo M. Davidoff, Brooklyn, has been appointed professor of clinical neurologic surgery at Columbia University College of Physicians and Surgeons. He is also to become attending neurologic surgeon at the Montefiore Hospital for Chronic Diseases about September 1.

Economic Talks for Medical Students.—The coordinating council of the five county medical societies of greater New York is sponsoring a series of lectures on the social and economic problems of medicine for students in all medical colleges in the city. Dr. William B. Rawls, chairman of the council, opened the series February 24 with a discussion of "Organized Medicine's Effort to Meet the Changing Aspect of Medical Economics."

First Lecture in Series Named for Menas Gregory.—Dr. Edward A. Strecker, professor of psychiatry, University of Pennsylvania School of Medicine, Philadelphia, will deliver the first of an annual series of lectures established in memory of the late Dr. Menas S. Gregory at the New York University College of Medicine, April 27. His subject will be "Psychiatry Speaks to Democracy." Dr. Gregory was for many years professor of psychiatry at New York University College of Medicine. Under his will the medical school received a fund of $40,000, half of which was to be used to establish an annual lectureship and the other half to establish the Menas S. Gregory Fund in support of the professorship in psychiatry.

Proposed Pay Increase for Physicians Denounced.—The 17 cents an hour pay increase for physicians working part time for the city health department, proposed by Mayor Fiorello La Guardia in his executive budget for the coming year, was denounced April 5 by the Medical Society of the County of New York as "completely insufficient to solve the problem and to insure a satisfactory grade of performance in these essential health services." James E. Bryan, executive secretary of the society, in a statement to the press, said that the mayor, in recommending a nominal increase of 50 cents for each three hour session, "has recognized, in principle at least, the inadequacy of the present fee rates." He is reported to have said that the mayor had failed to reply to a letter from the city requesting "a substantial increase in the rates of remuneration," together with "a system of limited tenure." The society was said to believe that wages the city is paying these doctors are "comparable to those that prevailed in 1897." About 500 physicians are said to be involved in this situation, two thirds of them in the baby health clinics and in the public schools, while the others either work in the cardiac or eye clinics or are tuberculosis clinicians, diagnosticians in the bureau of preventable diseases or clinic chiefs. For these

essential duties the physicians receive $5 for each three hour session or, if affiliated with the health department before March 15, 1944, $5.50. Supervisors receive $6 for three hours, or $6.50 if their service predated March 15, 1944. The society pointed out that industry in the city, in employing physicians to attend company workers, paid as high as $15 for a three hour session and that the range for "other social and semi-public agencies" was from $9 to $15.

Eye Bank for Sight Restoration.—The organization of the Eye Bank for Sight Restoration, Inc., which will collect and preserve healthy corneal tissue from human eyes for transplanting to blind persons who have lost their sight from corneal defects, was announced April 13. Headquarters are at 210 East 64th Street. Stanley Resor, president of the J. Walter Thompson advertising company and the Manhattan Eye, Ear and Throat Hospital, has been elected president of the Eye Bank. Other officers are Dr. Richard Townley Paton, vice president; Cyril B. Hartman, secretary; Walter C. Baker, treasurer, and Mrs. Henry Breckinridge, executive director. The organization, national in scope, has been incorporated under the laws of New York State and twenty-two leading hospitals in New York City are now affiliated with it; in addition, twenty leading ophthalmologists throughout the country will serve in an advisory capacity. An announcement to the press indicated that between 10,000 and 15,000 blind persons with corneal defects, in the United States, may have an opportunity to see again through the activities of the eye bank. The purpose of the bank is to make available a supply of fresh or preserved corneal tissue wherever and whenever needed by hospitals and surgeons who are qualified to perform the corneal graft operation. It is also planned to extend, through scholarships and fellowships, the knowledge and skill required to perform the delicate operation, which consists in substituting a healthy cornea for a damaged one and which can restore sight in only one type of blindness, that caused solely by opacity of the cornea when the rest of the eye and optic nerve are normal. One of the most important objectives will be to discover a method for preservation of the corneal tissue over a longer period of time than is now possible. At the present time the corneal tissue taken from a living or dead person may be stored for only three days before it is transplanted. Corneas obtained from a dead person must be removed within a few hours after death. In New York State, however, it is necessary to have the legal consent of the next of kin for a postmortem removal of an eye, even though the deceased left written instructions for the use of his eye in this way. The National Society for the Prevention of Blindness and other public health and medical agencies are cooperating with the project. The New York chapter of the American Red Cross, through its motor corps division, has taken the responsibility for transporting corneas between the Eye Bank and its affiliated hospitals. Physicians who are participating in an advisory capacity are Lieut. Col. M. Elliott Randolph, M. C.; Col. Derrick Vail, M. C.; Drs. Harry S. Gradle, Chicago; Alan C. Woods, Baltimore; Theodore L. Terry, Boston; William L. Benedict, Rochester, Minn.; Lawrence T. Post, St. Louis; Dohrmann K. Pischel, San Francisco; Edmund B. Spaeth, Philadelphia; Cecil S. O'Brien, Iowa City; Purman Dorman, Seattle; David H. Webster, Herbert B. Wilcox, John M. McLean, John H. Dunnington, E. Clifford Place, Daniel B. Kirby, Conrad Berens, Ernest L. Stebbins and Dr. Paton, all of New York. Initiation of the project was mentioned in THE JOURNAL, May 20, 1944, page 220.

WASHINGTON

Memorial to Physician.—An oxygen memorial tent will be contributed to the city of Anacortes in honor of Dr. Samuel G. Brooks, who died January 16.

Physicians in the Legislature.—Dr. Donald Black, Port Angeles, is the one physician member of the state senate, according to *Northwest Medicine*, and Dr. Ulric S. Ford, Forks, the one physician member of the house of representatives. Both physicians are chairmen of their respective medical committees.

Funds for Proposed Medical Dental School.—The governor has signed a bill calling for an appropriation of $450,000 for expansion of the premedical school in operation at the University of Washington, Seattle, and $3,750,000 to erect a medical school and hospital as soon as building materials are available, according to *Northwest Medicine*. Immediate plans for development of the school contemplate expansion and complete equipment of the existing premedical school to make it a school of the highest quality for teaching the basic medical sciences, which comprise anatomy, physiology, chemistry, bacteriology and pathology. It is planned to begin operation of the school in the fall of 1945, with complete physical preparations and a carefully selected teaching force to meet the demands required. It is planned to start with a freshman class and add other classes as the school progresses.

WISCONSIN

Spring Clinics.—The council on scientific work of the State Medical Society of Wisconsin, in cooperation with the Eau Claire, Portage, Outagamie and Milwaukee county medical societies, has launched a program of spring clinics consisting of the following:

Dr. Clarence O. Sappington, Chicago, Industrial Medicine—Scope, Present Status, Future Possibilities.
Dr. Hans H. F. Reese, Madison, Psychoneuroses and War.
Dr. John A. Toomey, Cleveland, Laryngeal Emergencies in Children.
Poliomyelitis, diagnosis from the: symptomatology in signs of acute anterior poliomyelitis, Dr. Herman W. Wirka, Madison; differential diagnosis of poliomyelitis from other neuron lesions, Dr. Toomey; poliomyelitis as seen by the neuropsychiatrist, Dr. Reese, and the immediate orthopedic treatment of anterior poliomyelitis, Dr. Wirka.

The sessions will be held at Eau Claire May 8, Stevens Point May 9, Appleton May 10 and Milwaukee May 11.

Woman's Auxiliary Inaugurates Health Program.—The first annual health program sponsored by the Woman's Auxiliary to the Medical Society of Milwaukee County will be presented May 2 in the Solomon Juneau Hall in the Milwaukee Auditorium. Mrs. Edward F. Barta, Milwaukee, president of the auxiliary, will preside at the session, and Dr. Josiah J. Moore, Chicago, Treasurer of the American Medical Association, will act as moderator. The mayor of Milwaukee, John L. Bohn, will open the program and speakers will include:

Dr. Edward R. Krumbiegel, Milwaukee, Can You Prove You Are a Citizen?
Dr. William W. Bauer, Director, Bureau of Health Education, American Medical Association, Chicago, Stop Annoying Your Children.
Dr. Clifford J. Baborka, Chicago, Too Fat—Too Thin.
Dr. Austin E. Smith, Secretary, Council on Pharmacy and Chemistry, American Medical Association, Chicago, Miracle Drugs in Modern Warfare.

GENERAL

Illegal Penicillin Export Halted.—On March 30 the Treasury announced that customs agents seized 26,000,000 units of penicillin at Laredo, Texas, in what is believed the first attempt to export the valuable drug without a license, newspapers reported. A Treasury spokesman said no further information is available in Washington. Export control is administered by the Foreign Economic Administration but is enforced by customs agents stationed at the ports and borders.

Actions on 1945 Conventions.—Reports received by the American Medical Association indicate the following action for the 1945 sessions of the respective organizations:

American Federation for Clinical Research, canceled; sectional meetings will be held in the fall if the Office of Defense Transportation revokes its present ruling.
American Laryngological, Rhinological and Otological Society, canceled.
American Orthopedic Association, canceled.
American Psychoanalytic Association, canceled.
American Society of Clinical Pathologists, canceled.
Association for Research in Ophthalmology, canceled; essayists are requested to reserve their manuscripts for a possible meeting in 1946.
Association for the Study of Internal Secretions, canceled; executive meeting of council in New York, April 17.
Western Association of Industrial Physicians and Surgeons, canceled.

Mead Johnson and Borden Awards.—Announcement is made by the American Institute of Nutrition that the Mead Johnson and Company prize for 1945 has been awarded to Dillworth Wayne Woolley, Ph.D., of the Rockefeller Institute for Medical Research, New York, in recognition of his studies on the inhibitors of vitamins and for his many contributions to the identification of nutritional factors of a vitamin nature. The institute also announced that Harold H. Mitchell, Ph.D., professor of animal nutrition, University of Illinois, Urbana, Ill., has been given the Borden Award in nutrition in recognition of his "outstanding contributions which have emphasized the nutritive significance of the components of milk and of dairy products."

Narcotic Violations.—The U. S. Bureau of Narcotics announces the following actions:

Dr. Florian A. Domalski, Trenton, N. J., and Toledo, Ohio, following his plea of guilty at the U. S. District Court at Newark, N. J., February 17, was placed on probation for a period of five years following the suspension of his sentence by Federal Judge Philip Forman on condition that he enter the U. S. Public Health Service Hospital, Lexington, Ky., and remain until discharged as cured of his addiction to narcotics.

Dr. Don D. Cornell, Picher, Okla., formerly of Boston, and recently occupying an office with Dr. George A. Hughes, Siloam Springs, Ark., was sentenced on his plea of guilty in the U. S. District Court at Tulsa, Okla., on February 20 for violation of the narcotic laws by Judge Royce Savage to serve a term of one year and one day and fined the sum of $250.

Dr. Abijah C. Fields, Ensley, Ala., pleaded guilty in the U. S. District Court at Birmingham, Ala., February 15 and was fined $500 and placed on probation for a period of five years for violation of the narcotic law.

Prize Winners in Traffic Safety Contest.—The state of Connecticut and the city of Lansing, Mich., on April 4 were named grand prize winners in the national traffic safety contest conducted by the National Safety Council. All 48 states and 1,307 cities participated in the contest, which covered the calendar year 1944, the award to go to the state and city which, in the opinion of the judges, came nearest to doing the most that could be done practically for traffic safety. Lansing reduced its traffic death toll to 4 in 1944, as compared to 7 in 1943 and a total of 26 for the three years preceding 1944. Connecticut reduced its traffic deaths to 221 in 1944 from 235 in 1943; this is the second time Connecticut has been a grand award winner.

New Pharmacopeial Headquarters.—The board of trustees of the United States Pharmacopeial Convention has purchased a building at 4738 Kingsessing Avenue, Philadelphia, for temporary headquarters. For almost twenty years the Philadelphia College of Pharmacy and Science has provided quarters for the pharmacopeial revision chairman and his staff, but increasing work has necessitated larger accommodations. The new quarters, located a short distance from the Philadelphia College, consist of a two story, two apartment building and will be renovated and refitted for pharmacopeial purposes providing adequate storage space and fireproof facilities for the protection of records. It is announced that, with independent headquarters established now, consideration will be given, when the time comes, to obtain permanent headquarters in Washington.

1945 Lasker Award Designated for Rehabilitation of Mentally Handicapped.—The Lasker Award for 1945 will be given for a noteworthy contribution to the rehabilitation of the mentally handicapped. The National Committee for Mental Hygiene, which made the announcement April 1, is now receiving nominations with supporting data, to be presented to an anonymous jury selected each year for its competence to judge accomplishment in the field chosen. The award of $1,000, established in 1944, is made annually in November by the Mary and Albert Lasker Foundation for meritorious service and significant contributions to promoting mental health and increasing public understanding of mental hygiene. Col. William C. Menninger, M. C., chief consultant in neuropsychiatry, Office of the Surgeon General of the U. S. Army, was the first recipient of the award, for his contribution to the mental health of men and women of our armed forces (THE JOURNAL, Dec. 2, 1944, p. 902).

Cabinet Post Urged for Welfare Work.—Formation of a new cabinet post for the coordination of all education, health and welfare services in one administrative agency is the goal of a committee of twenty-five experts in these fields, headed by Mrs. Eugene Meyer, wife of the publisher of the Washington *Post*, and Leonard W. Mayo, S.Sc.D., dean of the School of Applied Social Science, Western Reserve University, Cleveland. According to the New York *Times* the group is at work on detailed plans which envisage a secretary of public social services, who might alternatively be called a secretary of education, health and welfare in the President's cabinet, it was stated. The proposed department would unify administrative control over federal welfare activities, working with similar departments in the states. Ultimate localization of the plan would be in "the Community Service Center," where public and private health and welfare agencies, doctors and psychiatrists would be available to individuals.

Essay Competition on Hospital Treatment of Psychiatric Patients.—"A Plan for Improving Hospital Treatment of Psychiatric Patients" is the theme of an essay competition sponsored by *Modern Hospital*. Judges will be drawn from the U. S. Public Health Service, the American Psychiatric Association and the National Committee for Mental Hygiene. Hospital administrators, psychiatrists, psychologists, social workers, nurses, therapists, former patients and any other interested persons are eligible to compete. Two or more persons may write a joint essay. The judges chosen and employees of *Modern Hospital* are excluded. Essays must be received by the Managing Editor, Modern Hospital Publishing Company, 919 North Michigan Avenue, Chicago 11, by October 1. Essays received after this date shall be eligible for consideration only if they are mailed within the continental United States prior to midnight, September 25. Three prizes will be awarded, $500, $350 and $150. Winners will be announced on or before December 31. In case of a tie, duplicate prizes will be granted.

Birth Registration Designated for Child Health Day.—May 1 has been designated by Presidential proclamation as Child Health Day. The proclamation requests that "each community use the day to impress upon parents the importance of registering the birth of every baby born in the United States." The proclamation also urged the mobilization of community resources "for the better care of our children so that the growing generation will be strong to mold the peace." On the basis of a detailed study of infants reported in the 1940 census but not registered as part of the vital statistics of the states in which they were born, the bureau of census estimated, according to the New York *Times*, that 1 of every 13 children born each year is not registered, the total of unregistered births exceeding 200,000 every twelve months. This information was reported simultaneously with President Roosevelt's proclamation by Miss Katharine F. Lenroot, LL.D., chief of the Children's Bureau, and James C. Capt, director of the bureau of the census. In connection with the announcement of a joint sponsorship of the nationwide birth registration campaign, the President's proclamation mentioned "the many physical defects which handicap large numbers of adult citizens," which are evident during childhood and which could be prevented or corrected with proper care at that time. Miss Lenroot pointed out that funds under the Social Security Act for this purpose are allocated to the states on the basis of the number of registered live births, and, unless all are registered, the state receives a smaller amount than that to which it is entitled, and as a result fewer children get care. The Bureau of the Census study showed that birth registration was lower in the nonwhite population, the rate for nonwhites ranging under 50 per cent in two states, New Mexico and Arizona. New York's registration rate was 98.7 per cent, with a rate of 96.3 per cent among the nonwhite population. Both Connecticut and Minnesota had a higher than 99 per cent registration.

LATIN AMERICA

Health Activities in Latin America.—*Congress of Radiology.*—The second Inter-American Congress of Radiology will be held in Havana, Jan. 19-24, 1946, under the presidency of Dr. Pedro L. Fariñas Mayo. Additional information may be obtained from the secretary-general, Dr. Ricardo L. Hernandez Begueire, Calle 23 No. 411, Velado, Havana, Cuba. According to *Radiology* the formal organization of the Inter-American College of Radiology is scheduled for this meeting.

Dispensary for Merchant Seamen.—Brig. Gen. Henry C. Dooling, M. C., chief health officer of the Panama Canal, opened recently a merchant marine dispensary in the port of Balboa. All shipping agents have been notified of the new service and henceforth it is expected that physicians will need to make only emergency calls aboard ships. Major Raymond H. Ralston, M. C., and Dr. Glenn Adams have been assigned as physicians to the staff, which also include a psychiatrist, two dentists and a clerical assistant. Formerly merchant seamen received medical attention at the Balboa dispensary, but inadequate facilities and the loss of time in going and coming from the pier area necessitated the installation of the new service.

DDT.—Production of DDT will be on a large scale in Mexico by the organization Petróleos Mexicanos for distribution in the states of Mexico by the department of public health.

Deaths in Other Countries

Denis J. Coffey, president of Dublin University College from 1908 to 1940 and formerly professor of physiology, Catholic University School of Medicine, Dublin, and a representative of the National University of Ireland on the General Medical Council since 1921, died April 3.——**Hans Fischer,** Munich, for many years professor at the Technische Hochschule and 1930 winner of the Nobel prize in chemistry for his discovery and isolation of hematin, has died, the New York *Times* reported April 7, at the age of 63.——**Hans Sachs,** formerly professor of immunology at the University of Heidelberg Medical School and at the time of his death connected with Trinity College in Dublin, and also at one time connected with the Institute of Frankfort on Main, died recently following a prostatectomy operation.——**Major Gen. Sir Robert Charles MacWatt,** honorary surgeon to the late King George V and formerly director general of the Indian Medical Service, died suddenly, April 14, aged 80.

CORRECTION

Diabetic Coma.—The number 5 should replace 15 on the second line of table 6 on page 561 of THE JOURNAL, March 10.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 17, 1945.

Death of Lord Dawson

Death from pneumonia, at the age of 81, has removed from the profession a prominent figure, Lord Dawson, president of the British Medical Association. He attained every possible honor and distinction, including that of physician to four British kings. Educated at University College, London, and at the London Hospital, he was appointed assistant physician to the latter in 1893. An excellent teacher, lecturer and writer, he made his reputation as a general physician of sound judgment who won the patient's confidence. As a consultant he was valued for his all round ability, but he showed special interest in diseases of the alimentary canal. In his early days he wrote many articles on diabetes mellitus, diabetes insipidus, influenza, rheumatoid arthritis and the physical examination of the stomach and intestine for the then popular Allchin's Manual of Medicine. In the war of 1914-1918 he was consulting physician to the British armies in France. He led a special investigation into the causes of infective jaundice among the troops. In association with two collaborators he showed that it was the same in clinical and pathologic features as the disease described by the Japanese as due to a spirochete in the liver.

In medical politics no one was so influential both in the profession and outside it with the government. His elevation to the House of Lords in 1920 was the first attempt by a British government to utilize medical knowledge in that chamber. An excellent speaker, his views were expressed with great force and clarity. In 1930 he addressed the Canadian Club on "Medicine and Statesmanship." He pleaded for the delegation by the state of social services each to a special body, a view which he expressed many years later in connection with the government's present proposals for a comprehensive health service. He sounded a note of caution and favored a gradual advance. He wanted the government to begin with organization of hospital and consultant services and to leave general practice at first untouched. In 1932, when the British Medical Association celebrated its centenary in London, he was president and filled the office with great distinction. It is significant that in 1943, when the association lost by death its president and the medical profession was faced with the greatest crisis in its history by the publication of the government's scheme for a health insurance service for the whole population, Lord Dawson, notwithstanding his age, was again chosen to fill the office of president. He was honored by degrees from several universities at home and abroad, including Pennsylvania and McGill.

The National Loaf

The national loaf has aroused much controversy in the political sphere. We seem to be only waking up to the fact that for those who depend largely on bread the extraction of so much from the wheat in order to obtain white flour is a gigantic blunder. Before the war the flour used for bread contained only 72 per cent of the wheat grain. During the war this was raised to 85 per cent as a precautionary measure against shortage. In October the percentage was reduced to 82.5 and later to 80. In the House of Lords Lord Teviot asked whether the extraction rate of wheat had been reduced below the standard of 1942 and moved that 85 per cent should be regarded as the minimum compatible with maintaining the health of the people. Lord Addison, anatomist, said that scientific evidence was in favor of the motion. More ought not to be taken out of the grain than would permit of making a good and wholesome bread. Lord Horder, physician, spoke of the value of 85 per cent extraction and recalled that when in 1942 this bread was introduced he said that no single step which the government could have taken was so calculated as this to raise the country's nutrition. That statement after three years' experience had proved correct. The Red Army was fed on 100 per cent extraction. They took no risks in the matter, and all would agree that by their performance they were justified. Lord Geddes said that high extraction had an important bearing on tooth health as well as general health. Lord Hankey said that the reversion toward prewar white bread was a mystery. It appeared to be abandonment of inexpensive and natural means of preventing disease. Replying, Lord Woolton, minister of reconstruction, said that the reduction was made on expert advice that it could be safely done without interfering with the nation's health. Since then it had been made clear that we could go lower and get all the advantages from a health point of view without consuming so much bran. They were trying out the experiment but had not yet got the figures. If they found that they were wrong they would go back. Though the motion was by leave withdrawn, the objectors were not at all satisfied. One had information from a high medical authority that in the 80 per cent extraction about half the iron was lost. The decision of the government to reduce the extraction is condemned by the *British Medical Journal* as impairing the nutritive value of the loaf.

The Training of Psychiatrists

A committee on psychologic medicine of the Royal College of Physicians has made a report which points out the inadequacy of the requirements for the diploma in psychologic medicine. It recommends a five year course of study and clinical and laboratory work after one year as house physician in a general hospital. This period would allow for the diversity of experience now necessary for the psychiatrist and is intended to prevent the tendency for psychiatry to be split up into a number of specialties, the practitioners of which tend to drift apart and to have little in common in their points of view. Criticizing the report, the *British Medical Journal* regrets that not more time than three months is assigned to the study of psychology, the principles and methods of which are of value not only to the psychiatrist but to the nonmedical psychologist as well. The committee realizes that such a curriculum as it suggests can be brought into effect only gradually, and that the budding psychiatrist may have some difficulty in financing himself during the period. It therefore hopes that it may be possible to arrange for him to hold paid appointments during the greater part of the time.

Investigation of Estrogens in Cancer

The Royal Society of Medicine has arranged for a scientific committee to investigate the effects of estrogens in cancer. The chairman is E. C. Dodds and the members are sectional representatives: experimental medicine and therapeutics, A. L. Bacharach and K. M. A. Perry; obstetrics and gynecology, Malcolm Donaldson and James Wyatt; pathology, W. E. Gye and R. W. Scarff; radiology, Ralston Paterson and B. W. Windeyer; surgery, Rupert Corbett; urology, F. McG. Loughnane and Clifford Morson; co-opted, G. B. Stebbing and A. B. Bratton; statistical adviser, K. Mather. The advisability of forming such a committee was considered by the council of the Royal Society of Medicine after a preliminary investigation by the radiologic section at fifteen radiotherapeutic centers on the effects of diethylstilbestrol in more than 100 cases of cancer of the breast.

At the first meeting the committee decided to concentrate on carcinoma of the prostate, breast and esophagus, to confine the investigation to diethylstilbestrol at two prescribed dosage levels and to keep records on forms based on those of the National Radium Commission approved in the minister of health's scheme for cancer. Members of hospital staffs who may wish to cooperate in the investigation are invited to communicate with the honorary secretary, F. Ellis.

A New Remedy for Leprosy

The *British Medical Journal* has received, through the courtesy of the French embassy in London, a copy of a dispatch from the colony of Madagascar giving a preliminary account of the discovery of a new remedy which has given remarkable results in the treatment of advanced lepromatous cases of leprosy. In 1937 two French physicians, Drs. Boiteau and Grimes, extracted a new glucoside from an umbelliferous plant growing in Madagascar called Hydrocotyle asiatica, which in doses near a toxic level gave encouraging results in leprosy. In 1938 Bontemps, working in the leprosy laboratory at Antananarivo, the capital of Madagascar, discovered a new glucoside, which he called asiaticocide and which was much less toxic. By further research Boiteau obtained a solution suitable for injection, which, he holds, acts as a solvent of the waxy coating of the bacillus of leprosy, which then becomes fragile and can be easily destroyed by the tissues or by an adjuvant drug. In this connection it may be recalled that a British investigator, Leonard Rogers, in 1923 described a defatting action of injections of chaulmoogrates and morrhuates on the bacilli of leprosy and tuberculosis, based on estimates of the lipase in the blood before and after treatment. The results now reported from the new glucoside include softening and breaking down of nodules, followed by cicatrization. Healing of whitlows and perforating ulcers and gradual improvement of anesthesia and muscular atrophy are also claimed. Still more remarkable is the claim that eye lesions are rapidly cured if treated before the posterior chamber is involved.

The Value of Mass Miniature Radiography

The Hospitals and Medical Services Committee of the London County Council reports that the first year of miniature mass radiography shows that the method has fully justified itself in detecting unsuspected lung and heart abnormalities. Of 45,682 persons examined, 335 were referred for further clinical and pathologic investigation for lesions probably tuberculous. Of this number 112 were advised to accept hospital and sanatorium treatment. Heart abnormalities were discovered in 83 cases.

PARIS

(From Our Regular Correspondent)

March 4, 1945.

Lumbar Sympathectomy

Leriche analyzed before the Académie de médecine the results of removal of the lumbar ganglions for various conditions in 800 cases. There were thirteen deaths, a mortality of 1.6 per cent in these 800 cases; the deaths were generally due to the primary disease. In 601 cases of arteritis there were complete failures, in 20 per cent of which it was necessary to resort to amputation, moderate results with persistence of vague clinical signs in 30 per cent and success in 50 per cent.

Sympathectomy is advantageous in ischemia of effort and in 1 out of 2 cases of ischemia of decubitus. One cannot count on a lasting result when ulceration has occurred. The successes are more numerous and satisfactory when the obliterations are low, which is logical if one considers that sympathectomy acts in dilating the collateral vessels. In successful cases the operation causes an easier walk and the disappearance of pains. However, in thromboangiitis the results are mediocre and temporary; the disorder continues its development in another area.

It is sufficient to remove the first and second lumbar ganglions. In hypertension one will add to this the removal of the last two dorsal ganglions and the section of the splanchnic on the right. Several days later the same intervention is made on the left side and an adrenalectomy is performed. In Raynaud's disease which is localized in one lower extremity, sympathectomy will be short. In postphlebitic sequelae success is possible only before the stage of ulceration. In megacolon and dolichocolon the operation must be bilateral: high sympathectomy with splanchnic section. After poliomyelitis an amelioration of the sensation of cold has been observed, but the cyanosis persists. Examination of the removed sympathetic chains shows neurolysis, inflammatory infiltrations and angiomatous aspects.

To the Société médicale des hôpitaux S. de Sèze and his collaborators have reported good results obtained by infiltration of the stellate ganglion by the anterior route in diffuse and extensive pains which follow a slight traumatism and which are accompanied by functional difficulties and vasomotor disturbances. This treatment also is good for painful paresthesias of the upper extremities in women between 40 and 50 and in a number of other painful syndromes of the upper extremity. The treatment is applicable not only to pains originating in the sympathetic but even to radicular pains, which may be benefited. It is known that the stellate ganglion and the eighth cervical and first dorsal roots are contiguous.

Stellate infiltration can be helpful in phalangeal stiffness which accompanies the formation of Heberden's nodes. Its action is less constant in chronic polyarthritis; but it can be useful at the onset of Dupuytren's disease and in facial sympathetic algias. It also gives good results in Raynaud's disease and in sclerodactylia as well as in different forms of angina pectoris.

Triple Vaccination

Ramon stated before the Académie de médecine that cases of tetanus are at present numerous and severe. Two recent improvements have been applied in antitetanic treatment: the solution of antitoxin, which does not produce serious accidents and perhaps can be employed for its prophylactic quality, and toxoid. At present the employment of combined immunization with antityphoid-paratyphoid vaccine and diphtheria and tetanus toxoids is obligatory in France. This triple "vaccine" has been still more improved by the addition of formaldehyde treated organisms in a concentration that is weaker than the primary mixture. The triple vaccine thus loses its disadvantages and keeps the same immunizing power. There have been carried out without accident 129,000 mixed (diphtheria-tetanus) and 28,000 triple (diphtheria-tetanus-typhoid-paratyphoid) vaccinations, some even in children weakened by food restrictions. The triple vaccination of nearly a million subjects in the French army in 1939 has already indicated its possibilities. Unfortunately, the vaccination has been applied only irregularly among the civil population since the invasion of France and the German occupation.

Tanon at the session of Nov. 28, 1944 reported that in 1942 and 1943 there were carried out 400,000 injections with triple vaccine without an accident.

The Arsenicals in Syphilis

Durel at the Société médicale des hôpitaux has opened a discussion on the employment of dioxyaminodichlorarsines in syphilis. These compounds are eliminated much faster than the arsenobenzenes; this permits all day intravenous injections with a fortnightly dose of 0.12 Gm. They do not cause nitritoid crises, but occasionally digestive disturbances with or without dental shock or rare serious apoplexies. Although the treatment is brief and is completed in two weeks, the patient must be hospitalized. According to other observers the treponemes disappear from the lesions more rapidly than do the lesions themselves and these lesions are not cicatrized as easily with the dioxyaminodichlorarsines as with the arsenobenzenes. Slight accidents of intolerance are often observed. They can be avoided or reduced by making the injection rapidly. Flandin adheres to the Politzer method, three injections of 0.9 Gm. of neoarsphenamine every three days, after a desensitizing injection of 0.15 Gm. This treatment acts with the same rapidity as the dioxyaminodichlorarsines.

BRAZIL

(From Our Regular Correspondent)

RIO DE JANEIRO, Feb. 18, 1945.

The Campaign Against Yellow Fever in 1944

The Ministry of Health has released for publication a report of the activities of the Division of Yellow Fever of the National Department of Health during the year 1944. According to the report the Aedes mosquito has been eradicated from the states of Maranhão, Espirito Santo, Rio de Janeiro, Minas Gerais, Goiaz, Paraná, Santa Catarina and the Federal District. In the remaining thirteen states the antimosquito work is being intensively carried out, so much so that it is expected that during the current year the Aedes mosquito will be eradicated also from five or six more states of the remaining area. The territory now entirely freed of the Aedes mosquito represents an area of about 800,000 square miles, or 24 per cent of the whole country, and has a population of about 15.8 million, or 38 per cent of the total population. To achieve this result an organized anti-Aedes specific control work is being conducted in 29,529 localities, a figure to be contrasted with 6,024 in 1940, the first year of the present organization against yellow fever. The total number of inspections and reinspections of dwellings and other places where water deposits have been found reached the figure of more than 2,800 million, as against about 2,100 million in 1940.

There is a vast network of 1,274 posts of viscerotomy, throughout the entire country, to maintain a close watch on all suspicious deaths from feverish illnesses and perform the small operation that enables a central laboratory to make a pathologic examination of a small piece of liver, without the necessity of a complete necropsy. Out of these 1,274 posts, 1,205 have sent to the laboratory a total of 325,244 liver samples.

During the year 8 cases of yellow fever have been reported and confirmed, all of them having been ascertained to be of "jungle" yellow fever, in which sylvatic mosquitoes act as the medium of transmission. There has been no instance of Aedes-carried urban and suburban yellow fever. In 103 counties of 17 states a total of 210,442 persons have been inoculated with yellow fever vaccine, a large part of these persons belonging to the military services.

Penicillin Treatment of the Bartonellosis of Splenectomized Rats

Owing to the close relations between bartonellosis and the spleen, the exact nature of this infection is interesting to endocrinologists as well as to bacteriologists. The strange fact of the appearance of bartonellosis in animals that have been subjected to splenectomy seems to point to the existence of some protective mechanism of endocrine nature. Starting from the fact that splenectomy presents a poorly defined clinical picture, Dr. Thales Martins, head of the Division of Endocrinology of the Oswaldo Cruz Institute, suggested that bartonellosis might be used as a valuable test for the study of the physiology of the spleen. For this reason Dr. F. Ubatuba and Dr. Gessy Vieira of the Division of Endocrinology decided to study this problem experimentally. In a first paper on this general subject, the authors report the results of a preliminary investigation on the effect of penicillin in the treatment of bartonellosis of splenectomized white rats. They used 80 rats, previously splenectomized, that have been carefully studied in regard to the secondary anemia consequent on the operation. They ascertained that the anemia closely coincides with the appearance of the bartonellas in the circulating blood and that it shows an earlier appearance and a more rapid and severe evolution in Brazil in comparison with the same results as published in the medical literature of other countries. The observed mortality rate, higher for the male animals, was about 50 per cent. The authors used the opportunity to test the therapeutic effect of barium penicillin prepared at the Oswaldo Cruz Institute on the Bartonella infection. These results were completely negative, at least with the dose of 400 Oxford units that was employed.

Penicillin in the Treatment of Brazilian Typhus

Dr. Octavio Magalhães and Dr. Adyr Rocha, who have carried out experimental studies on Brazilian typhus in the state of Minas Gerais, have published the results of their work on the treatment of the experimental disease of guinea pigs with penicillin. They found that small doses of 1,600 Oxford units inoculated during the first twenty-four to forty-eight hours of the appearance of the feverish reaction are unable to modify the course of the disease in the temperature curve or in the testicular or splenomegalic manifestations. When used in larger doses of 25,000 to 30,000 Oxford units through the peritoneal route during the first twenty-four hours penicillin causes the temperature to fall to normal and is able to attenuate the visceral manifestations of the disease. In these doses, even when injected in later stages of the disease, penicillin causes the temperature to fall, modifying to a certain degree the virulence of the virus in the animals. Direct contact of penicillin with the virus during several hours causes complete loss of the virulence of the virus. The authors then conclude that, with higher doses of the drug given intravenously to man, it would be possible perhaps to modify for the better the evolution of severe cases of Brazilian typhus, which frequently show 85 and 90 per cent of fatality.

Brief Items

Gustavo Baz of the Ministry of Health of Mexico has arrived at Rio de Janeiro, where he will spend a few days as a guest of the Brazilian government.

Dr. José Paulo de Azevedo Sodré has been elected to membership of the National Academy of Medicine. Dr. Sodré is head of the surgical department of the Municipal Emergency Hospital of Rio de Janeiro.

A new school hospital has just been opened by the Department of Education of the Rio de Janeiro city administration. This institution will be known as the "Oscar Clark School-Hospital" in honor of Dr. Oscar Clark, to whom the city owes much in the development of school health.

Dr. J. de Moraes Grey was recently received as a new member of the National Academy of Medicine.

Marriages

WILLIAM W. FARLEY, Richmond, Va., to Miss Rachael Gilbert Smith of Kings Mountain, N. C., January 20.

HAL PEARSON JAMES, Whitehaven, Tenn., to Miss Elizabeth "Mickey" McClure of Waynesville, N. C., recently.

JOSEPH LEO RUBEL, Columbus, Miss., to Miss Margaret Patricia Meacham of St. Louis, January 20.

SAMUEL P. NIXON, Fairport, N. Y., to Miss Elizabeth S. Hopkins of Haddonfield, N. J., February 6.

HERBERT LOUIS TREUSCH, Atlanta, Ga., to Miss Belen Maria Bernabe of San Juan, P. R., February 14.

BUELL H. VAN LEUVEN, Sault Ste. Marie, Mich., to Miss Gladys Collin of Empire, February 9.

BLANCHE O. NOBLE NICOLA to Major Lee Edgar Beakley at Glendale, Calif., January 24.

ERVIN ELLISON, Lancaster, Pa., to Miss Frances S. Haines in Brooklyn, February 3.

LEE M. GOODMAN to Sgt. Helen C. Robinson, both of Jersey Shore, Pa., February 14.

CONIE C. LOWRY to Miss Betty Jane Hamilton, both of Nashville, Tenn., February 3.

ERN C. MOONEY, San Antonio, Texas, to Miss Marie Sims of Mexia, December 27.

Deaths

Edward Lyman Allen, Brookline, Mass.; L.R.C.P., London, and M.R.C.S., England, 1937; member of the Vermont State Medical Society and the American Medical Association; served on the staff of the Bangor State Hospital, Bangor, Maine; died in Boston January 22, aged 58, of pulmonary edema.

Adolph John Baiocchi ✠ San Jose, Calif.; Stanford University School of Medicine, San Francisco, 1919; fellow of the American College of Surgeons; past president of the Santa Clara County Medical Society; interned at the San Francisco Hospital; member of the staffs of the Santa Clara County Hospital, San Jose Hospital and the O'Connor Sanitarium, where he died February 16, aged 52, of typhoid.

Horace Mitchell Baker ✠ Lumberton, N. C.; Harvard Medical School, Boston, 1917; past president of the Robeson County Medical Society; served during World War I; member of the International College of Surgeons; for many years a member of the local school board; a director of the Scottish Bank; member and past president of the Rotary Club; member of the board of the State Hospital in Raleigh; surgeon, chief of staff and administrator of the Baker Sanatorium, where he died February 28, aged 57, of cerebral hemorrhage.

Willard Doolittle Becker, Lakeville, N. Y.; College of Physicians and Surgeons, New York, 1890; at one time president of the Rochester Pathological Society; served as mayor of the village of Livonia, where he had been a member and president of the board of education; died in the Genesee Hospital, Rochester, January 24, aged 78, of carcinoma of the prostate.

George D. Bollard, Jefferson, Ohio; Western Reserve University Medical Department, Cleveland, 1888; died January 3, aged 84, of coronary occlusion and Parkinson's disease.

Charles Frederick Browne, Racine, Wis.; Chicago Homeopathic Medical College, 1898; member of the American Medical Association; for three years secretary-treasurer of the Racine County Medical Society; for many years a member of the local board of health; died January 30, aged 69, of coronary thrombosis.

Howard Storm Browne, Ponca City, Okla.; University of Illinois College of Medicine, Chicago, 1919; at one time dean and professor of materia medica at the School of Pharmacy of the University of Oklahoma; past president of the Kay County Medical Society; served an internship and taught chemistry at the University Hospital in Chicago; on the staff of the Ponca City Hospital; died January 27, aged 58, of coronary heart disease.

Louis Burckhardt ✠ Indianapolis; Universität Zürich Medizinische Fakultät, Zurich, Switzerland, 1889; emeritus professor of obstetrics at the Indiana University School of Medicine; in April 1940, on the completion of his fiftieth year of active practice, his colleagues and friends honored him and his wife with a commemorative dinner; member of the staffs of the Methodist Hospital and St. Vincent's Hospital, where he died March 20, aged 79, of complications resulting from an injury to his hip received in a fall.

John Laurence Callahan, La Crosse, Wis.; Rush Medical College, Chicago, 1891; died in the La Crosse Hospital January 5, aged 85, of cardiorenal disease.

William Austin Carr, Merriam, Kan.; University of Oklahoma School of Medicine, Oklahoma City, 1918; member of the American Medical Association and Missouri State Medical Association; served during World War I; on the staffs of the Bethany Hospital and St. Margaret's Hospital, Kansas City, Kan., St. Mary's Hospital and Trinity Lutheran Hospital, Kansas City, Mo., where he died January 4, aged 56, of coronary occlusion.

Caleb B. Chambers, Oklahoma City; Meharry Medical College, Nashville, Tenn., 1909; died in the Oklahoma City General Hospital January 21, aged 69, of diabetes mellitus and gangrene of the right foot.

Charles J. Chloupek, Green Bay, Wis.; Milwaukee Medical College, 1901; member of the American Medical Association; past president of the Brown-Kewaunee-Door County Medical Society; served as city health officer; on the staff of St. Vincent's Hospital; died February 21, aged 70, of respiratory failure following anesthesia.

William Peter Connor, Youngstown, Ohio; Georgetown University School of Medicine, Washington, D. C., 1908; one of the founders of St. Elizabeth Hospital, where he died January 20, aged 65, of carcinoma of the throat.

Donato Conte, Newark, N. J.; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Naples, Italy, 1929; died December 29, aged 62, of aortic regurgitation and aortitis.

Maurice Stewart Doak, Newport, Tenn.; University of Tennessee College of Medicine, Memphis, 1924; member of the American Medical Association; mayor of Newport; served during World War I; chief examining physician for the draft board; served as alderman; died January 20, aged 46, of an accidental gunshot wound received while returning from duck hunting.

Rafe Arnett Easter, Washington, D. C.; Howard University College of Medicine, Washington, 1914; first lieutenant, medical reserve corps, U. S. Army, not on active duty; died in the Veterans Administration Facility February 25, aged 57, of hypertensive heart disease.

James K. Egbert, Elgin, Ill.; Rush Medical College, Chicago, 1886; died in the Sherman Hospital February 5, aged 80, of carcinoma.

William Ansley Grant ✠ Bardwell, Texas; University of Nashville Medical Department, 1905; served on the staffs of the Terrell State Hospital in Terrell and the San Antonio State Hospital in San Antonio; died January 26, aged 63, of pulmonary fibrosis.

Brose Sumerville Horne, Gas City, Ind.; Medical College of Ohio, Cincinnati, 1895; past president of the Wells County Medical Society; at one time Indiana State Prison physician in Michigan City; served during World War I; an examiner for Spanish-American War veterans; died in the Veterans Administration Facility in Marion, February 12, aged 71, of hypertension and psychosis.

Daniel John Horton, Pomona, Calif.; Denver Homeopathic College, 1900; died December 16, aged 72.

James W. Janes, Columbus, Kan.; University of Tennessee Medical Department, Nashville, 1887; member of the American Medical Association; honorary member of the Kansas Medical Society; died January 18, aged 100, of myocardial failure.

Howard Reynold Johnson, Bishop Hill, Ill.; University of Illinois College of Medicine, Chicago, 1925; interned at the City Hospital in St. Louis; died February 26, aged 44, of malignant adenoma of the liver.

James J. Kane, Norristown, Pa.; Jefferson Medical College of Philadelphia, 1892; formerly coroner and postmaster; served two terms on the borough council; honorary chairman of the Montgomery County branch of the National Foundation for Infantile Paralysis; died in the Sacred Heart Hospital February 22, aged 85, of pyelonephritis.

George Kessel ✠ Cresco, Iowa; Rush Medical College, Chicago, 1885; formerly mayor; donor of park to city; fellow of the American College of Surgeons; surgeon-in-chief of St. Joseph Mercy Hospital; died January 29 aged 88, of heart block.

Nathaniel Clark King, Brockton, Mass.; College of Physicians and Surgeons, New York, 1884; member of the American Medical Association; died January 23, aged 83, of coronary occlusion.

Adolph Leonard Kyllo, Superior, Wis.; University of Louisville School of Medicine, Louisville, Ky., 1911; city health officer; served during World War I; on the staffs of St. Mary's, St. Joseph's and St. Francis hospitals; died in the Veterans Administration Facility, Minneapolis, February 18, aged 57, of coronary thrombosis.

Frank P. Lenahan, San Diego, Calif.; University of Pennsylvania Department of Medicine, Philadelphia, 1888; a founder of the Mercy Hospital in Wilkes-Barre, Pa., and the Nesbitt Memorial Hospital in Kingston, Pa.; died in the Mercy Hospital February 7, aged 80, of bronchopneumonia, left hemiplegia and general arteriosclerosis.

Michael Lewis Levitt ✠ Philadelphia; Jefferson Medical College of Philadelphia, 1906; died in Atlantic City, N. J., January 1, aged 65, of coronary thrombosis.

Arthur Luscomb, Waterbury, Conn.; New York Homeopathic Medical College, New York, 1883; died January 22, aged 83, of myocarditis following an attack of bronchopneumonia.

Kurt Helmer MacDuffie, New York; Yale University Medical School, New Haven, Conn., 1942; interned at the Roosevelt Hospital; diplomate of the National Board of Medical Examiners; commissioned a first lieutenant in the medical corps, Army of the United States, on June 10, 1943; served in New Guinea; honorably discharged on Aug. 30, 1944, because of physical disqualification; died January 10, aged 29, of bronchopneumonia.

Richard Roderick Marnell, Cincinnati; University of Cincinnati College of Medicine, 1933; member of the American Medical Association; served as athletic physician at Xavier College; member of the staffs of the Good Samaritan, St. Mary and Our Lady of Mercy hospitals; died February 9, aged 43, of coronary thrombosis.

Eugene Allan McCarthy, Bedford, Mass.; Harvard Medical School, Boston, 1887; member of the American Medical Association; died in Cambridge January 1, aged 84, of intestinal obstruction and myocarditis.

Patrick Farrell McPartland, Hartford, Conn.; Baltimore Medical College, 1905; member of the American Medical Association; served as president of the Hartford Medical Society and as secretary of the Hartford County Medical Society; fellow of the American College of Surgeons; on the staff of St. Francis Hospital; died January 28, aged 64, of coronary thrombosis.

Michael W. Minor, Comorn, Va.; University of Maryland School of Medicine, Baltimore, 1891; member of the American Medical Association; chairman of the local school board and the board of directors of the Bank of Westmoreland; died January 31, aged 77, of cerebral hemorrhage.

Gordon Baird Moffat, Kalamazoo, Mich.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1923; director of the city and county health department; formerly health officer of district number 4, comprising Alpena, Cheboygan, Montmorency and Presque Island counties; on the staffs of the Borgess and Bronson Methodist hospitals; interned at the Highland Park General Hospital in Highland Park, Mich.; died January 3, aged 46, of coronary occlusion.

LIEUT. MANNE P. ADAMS (MC), U.S.N.R., 1917-1943

LIEUT. (JG) BELTON A. BENNETT JR. (MC), U.S.N.R., 1913-1944

Marguerite Winifred Moir, Boston; Boston University School of Medicine, 1918; member of the American Medical Association; died December 3, aged 71, of carcinoma.

Chalmers Hale Moore ✠ Birmingham, Ala.; Johns Hopkins University School of Medicine, Baltimore, 1913; member of the Southern Surgical Association and the Southeastern Surgical Congress; died in the Jefferson Hospital January 3, aged 55, of coronary occlusion.

Harry M. Moore, St. Louis; Washington University School of Medicine, St. Louis, 1898; member of the American Medical Association; fellow of the American College of Surgeons; on the surgical staffs of the Frisco, Missouri Baptist, De Paul and St. Luke's hospitals; died January 16, aged 71, of heart disease.

Walter Scott Musser, Tyrone, Pa.; Jefferson Medical College of Philadelphia, 1895; member of the American Medical Association; died December 26, aged 77, of coronary occlusion.

Leonard Carothers Nigh ✠ Mansfield, Ohio; University of Cincinnati College of Medicine, 1923; died in the Mansfield General Hospital January 26, aged 49, of coronary thrombosis.

James Edmund Norman, Trenton, Texas; St. Louis College of Physicians and Surgeons, 1899; member of the American Medical Association; local surgeon for the Missouri-Kansas and Texas Railroad; on the staff of St. Vincent's Hospital, Sherman; died January 10, aged 76, of injuries received when the automobile in which he was driving was struck by a train.

Wilbur Myrtland Paige, Lynn, Mass.; Tufts College Medical School, Boston, 1919; died December 28, aged 50.

Richard Armstrong Pearse ✠ Brigham, Utah; Gross Medical College, Denver, 1900; past president of the Utah State Medical Association; fellow of the American College of Surgeons; member of the staffs of the Thomas D. Dee Hospital in Ogden and the Cooley Memorial Hospital; served as medical director of the Pearse Private Hospital; died January 21, aged 69, of coronary occlusion.

Charles Clarence Phillips, Hampton, Va.; Southwestern Homeopathic Medical College and Hospital, Louisville, Ky., 1901; member of the American Psychiatric Association; served during World War I; formerly on the staffs of the Eastern State Hospital in Lexington, Ky., and the Western State Hospital in Hopkinsville, Ky.; served on the staffs of various Veterans Administration facilities; died in the Veterans Administration Facility, Kecoughtan, February 13, aged 64, of coronary occlusion.

Julius Hyman Rabin, Kansas City, Kan.; Eclectic Medical University, Kansas City, Mo., 1914; member of the American Medical Association; served during World War I; on the staffs of the Bethany and Providence hospitals; died suddenly while en route to Alexandria, La., January 17, aged 53, of coronary occlusion.

Roy Bulkley Roberts, Brimfield, Ill.; Ensworth Medical College, St. Joseph, Mo., 1897; Rush Medical College, Chicago, 1899; served as mayor of Brimfield; formerly president of the Lions Club; died in St. Francis Hospital, Peoria, January 28, aged 69.

Joseph Bernard Rockett, Boston; Middlesex College of Medicine and Surgery, 1928; died January 4, aged 62, of coronary occlusion.

KILLED IN ACTION

Manne Perry Adams, Sebring, Fla.; Emory University School of Medicine, Atlanta, Ga., 1941; interned at the University Hospitals in Iowa City; commissioned a lieutenant (jg) in the medical corps, U. S. Naval Reserve, Aug. 12, 1941; began active duty on July 14, 1942; promoted to lieutenant on April 30, 1943; was awarded the Silver Star and Purple Heart posthumously; the citation accompanying the Silver Star award read "For conspicuous gallantry and intrepidity during action against numerically superior enemy Japanese forces near Koi-ari, Bougainville, British Solomon Islands, on Nov. 29, **1943**"; died in the Pacific area Nov. 29, 1943, aged 26, of a gunshot wound of the chest.

Belton Allen Bennett Jr., Greer, S. C.; University of Virginia Department of Medicine, Charlottesville, 1938; served an internship and residency at St. Luke's Hospital in Bethlehem, Pa.; served a residency at the Doctors Hospital in Washington, D. C.; received the degree of master of science in surgery from the University of Pennsylvania in 1943; commissioned a lieutenant (jg) in the U. S. Naval Reserve on Sept. 7, 1943; a surgeon aboard the U. S. S. *Cooper* which was torpedoed and sunk in Ormoc Bay, off Western Leyte; at first declared missing in action; presumptive date of death, according to the Navy Department, Dec. 3, 1944, aged 30.

Elizabeth Gregorievona Samoylenko, Boston; Albert-Ludwigs-Universität Medizinische Fakultät, Freiburg, Baden, Germany, 1905; at one time a member of the faculty of a medical college in Kharkov, Russia; served on the staff of the Massachusetts General Hospital; died January 13, aged 63, of hypertensive heart disease.

Herman Joseph Schlageter ✠ San Francisco; Cooper Medical College, San Francisco, 1895; formerly an assistant in the genitourinary department at his alma mater, and associated with the city board of health as sanitary inspector for the mission district; veteran of the Spanish-American War; served in France during World War I; died in the Stanford Hospital January 19, aged 72, of cerebral hemorrhage.

Alexander Shulman, St. Petersburg, Fla.; College of Physicians and Surgeons, New York, 1885; at one time practiced in New York City, where he had been on the staff of St. Mark's Hospital; died January 12, aged 83, of arteriosclerosis.

Kenneth Gilbert Smith, Portland, Ore.; University of Oregon Medical School, Portland, 1926; member of the American Medical Association; interned at the Letterman General Hospital in San Francisco; at one time a first lieutenant in the U. S. Army; served as acting assistant surgeon in the U. S. Public Health Service; died January 18, aged 43, of bronchogenic cercinoma.

John Joseph South ✠ Massillon, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1914; a medical officer with the British army during World War I; chief of staff at the Massillon City Hospital; died February 3, aged 55, of heart disease.

Thomas Richard Shannon, St. Louis; St. Louis College of Physicians and Surgeons, 1918; member of the Illinois State Medical Association and the American Medical Association; on the staff of the Alexian Brothers Hospital; died at his home in East St. Louis, Ill., January 27, aged 58, of coronary occlusion and influenza.

Capt. Walter E. Block, M. C., A. U. S., 1903-1944

Capt. Gordon Frederic Fischer, M. C., A. U. S., 1912-1944

Martin Wesley Steele, Corbin, Ky.; Kentucky School of Medicine, Louisville, 1905; in 1912 vice president of the Kentucky State Medical Association; past president of the Kiwanis Club; died February 16, aged 69.

Ulysses B. Stone, Buffalo; University of Buffalo School of Medicine, 1896; died in Palm Beach, Fla., January 18, aged 72.

Wladislaus M. Struzynski, Wilkes-Barre, Pa.; Northwestern University Medical School, Chicago, 1904; served on the staff of St. Joseph's Hospital in Joliet, Ill.; died January 15, aged 75, of congestive heart disease.

Rufus Amery Sullivan, Dallas, Texas; Barnes Medical College, St. Louis, 1907; member of the American Medical Association; died in St. Paul's Hospital January 14, aged 66, of carcinoma of the liver.

Clarence Conkle Taylor ✠ East Rochester, Ohio; Ohio Medical University, Columbus, 1898; served as a member of the Columbiana County board of health advisory council; president of the Minerva Savings and Banking Company; died in the North Side Unit of the Youngstown Hospital, Youngstown, January 21, aged 75, of prostatic hypertrophy and perirenal abscess.

William Henry Taylor, Irwin, Pa.; University of the City of New York Medical Department, New York, 1884; member of the American Medical Association; served on the staff of the Westmoreland Hospital in Greensburg; died January 17, aged 83.

Percy Hamilton Terhune, Hamden, Conn.; College of Physicians and Surgeons, New York, 1889; member of the American Medical Association and the Medical Society of New Jersey; at one time president of the board of health and city physician in Passaic, N. J., where he was on the staff of the Passaic General Hospital and on the visiting staff of St. Mary's Hospital; died in the Grace Hospital, New Haven, January 25, aged 77, of coronary heart disease.

Charles Oscar Thompson ✠ Boston; College of Physicians and Surgeons, New York, 1889; trustee of the Massachusetts College of Pharmacy; life member of the New England Historic Genealogical Society; died January 29, aged 82, of cerebral thrombosis.

Edward C. Tinsley, Indianapolis; Louisville (Ky.) Medical College, 1897; died January 26, aged 77, of cerebral hemorrhage and arteriosclerosis.

Henry Herman Unger, New York; Columbia University College of Physicians and Surgeons, New York, 1906; member of the American Medical Association; life insurance examiner; died January 29, aged 61, of heart disease.

Hamilton Vreeland, Ridgewood, N. J.; University of the City of New York Medical Department, New York, 1885; member of the American Medical Association; died January 12, aged 85, of carcinoma of the stomach.

Charles William Wang, Philadelphia; Jefferson Medical College of Philadelphia, 1906; served during World War I; died in the U. S. Naval Hospital December 4, aged 65, of large infarction anterior wall left ventricle of heart.

KILLED IN ACTION

Walter Eugene Block, Chicago; Chicago Medical School, 1930; member of the American Medical Association; interned at the Baptist Hospital in Houston, Texas; on the staff of St. Mary of Nazareth Hospital; commissioned a first lieutenant in the medical corps, Army of the United States, on July 10, 1942; later promoted to captain; went overseas in November 1943; with the Rangers when they landed on Normandy Beachhead at Port Du Hoe; received the Silver Star, Presidential Unit Citation, Purple Heart and Bronze Star with Oak Leaf Cluster and the Distinguished Service Cross; killed in action in Germany during his fourth major battle, Dec. 8, 1944, aged 40.

Gordon Frederic Fischer, Detroit; University of Michigan Medical School, Ann Arbor, 1942; served an internship and a residency in otology, laryngology and rhinology at the University Hospital in Ann Arbor, Mich.; commissioned a first lieutenant in the medical corps, Army of the United States, on June 29, 1942; later promoted to captain; killed in action in Belgium Sept. 16, 1944, aged 32.

Correspondence

WASSERMANN REVERSAL AFTER PENICILLIN

To the Editor:—In Queries and Minor Notes in THE JOURNAL, February 24, the item "Effect on Syphilis of Penicillin Treatment for Gonorrhea" ends with the statement "There is no information as to the effect of 100,000 to 200,000 units of penicillin given in one day on the blood test of a patient with an already existing positive serologic reaction."

While it concerns only one individual, the following case report is submitted in an effort to supply such information:

F. A., a Negro aged 23, was admitted to the Kansas State Sanatorium for Tuberculosis on Feb. 2, 1944 with far advanced pulmonary tuberculosis involving the right lung. At the University of Kansas outpatient clinic he had had 4 plus Wassermann and Kahn reactions on Dec. 24, 1943 and had received six injections of neoarsphenamine. On admission to the sanatorium his Kolmer reaction was doubtful and Kahn reaction positive.

On physical examination the left lung was normal; the right lung showed the usual signs of an active pneumonic tuberculous process in the upper half. Sputum was positive for tubercle bacilli. X-ray examination showed the left lung normal, the right with an infiltrative lesion in the upper half with cavitation in the first and second interspaces.

Pneumothorax was started on the right side February 29 with a good collapse, but by March 4 there was definite spread in the third interspace, left, peripherally, which was considered a focal reaction. This was absent on the x-ray film of March 2 and was quite obvious on March 4. At that time the temperature ranged as high as 102.4 F. for eight days, after which the daily range seldom went higher than 99.6 until August, when it reached 101 on several days. The patient improved clinically and the pneumothorax on the right was pushed to a 50 per cent collapse. No antisyphilitic treatment was given. On July 7 an intrapleural pneumolysis was done under negative pressure, cutting two posterolateral adhesions to the third and fifth ribs but leaving an apical adhesion because of the close proximity of a large vein. There was no appreciable elevation of temperature following the pneumolysis. On November 4 the temperature suddenly went to 102.8 F. and a couple of days later to 104 and continued high.

The x-ray reading of November 17, compared with the original of February 16, contained the statement that on the first x-ray of February 16 the fine radiating lines extending out from a presumably tuberculous process in the right hilus made one think that syphilis might be associated with this. The Wassermann reaction was positive, and the fact that there was a spread to the other side, despite the fact of a pneumothorax, made one want to try intensive antisyphilitic treatment. Accordingly on November 18 penicillin was started intramuscularly, every four hours, a total of 300,000 units being given over a period of seventy-two hours. The temperature, which had been running as high as 103 and 104 F., dropped the second day to a maximum of 99 and remained down after the discontinuance of the penicillin, rarely going above 99 at any time since.

X-ray examination on November 22, after 300,000 units of penicillin, showed that the lesion in the left chest looked better; on December 22 the right lung was down to 40 or 50 per cent of its original volume and there was atelectasis in the base, also an infiltrative lesion in the middle third of the left chest with cavity formation opposite the third interspace. In general, the picture remained about the same except that the infiltration in the middle third of the left lung looked better than it did before.

On November 28, ten days after the penicillin was given, the Kolmer and Kahn reactions were both negative. On a repeat December 12 they were still both negative.

The patient's general clinical condition has remained good and there has been no other antisyphilitic treatment than the penicillin.

ROY K. SMITH, M.D., Norton, Kan.

REGIONAL ENTERITIS

To the Editor:—The papers on regional enteritis by H. L. Bockus and H. W. Cave in THE JOURNAL, February 24, make it clear that the last word on this condition, which Homans and Hass aptly term "a clinical, not a pathological, entity" is yet to be written. Until the etiology is resolved, the approach to treatment must continue to be largely empirical. That surgery per se is not the final solution is evident from the frequency of postoperative recurrences. When manifestations such as stenosis, ulceration, abscess or fistulous formation present themselves, surgery (whether conceived as curative or only palliative) will, of course, be indicated. Yet, as S. F. Marshall points out (Regional Ileitis, *New England J. Med.* **222**:375 [March 7] 1940), "the patient with widespread involvement of the small intestine may of necessity [have to] be given medical treatment, because it is impossible to remove all the diseased bowel."

The question of the best treatment for the patient with early or mild regional enteritis is still a difficult one to answer. Cave reported 4 cases that presented at operation a typical early regional ileitis; only an appendectomy was done in each case and the patients have remained well for five years. I can testify to a similar result in a case of early or mild regional ileitis in a woman of 55. The gastrointestinal x-rays were negative save for gallstones. At operation in 1930 abdominal exploration demonstrated inflammation and thickening of the terminal ileum for a distance of about 6 inches, with edema of the mesentery and pronounced enlargement of the mesenteric glands. The gallbladder containing stones and a normal appearing appendix were removed; the postoperative course was uneventful. Gastrointestinal x-ray films taken one month after operation and again thirteen years later were negative. The patient has now been continuously free from abdominal symptoms for fifteen years.

In the early stages of regional enteritis, therefore, there is merit to Bockus's observation that "one should refrain from operating on some patients with regional enteritis in the absence of extensive infection or obstruction in order to determine whether or not the infective process will subside and some degree of resolution occur . . ."

CARL BEARSE, M.D., Boston.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Insurance: Chiropractic Treatments as "Medical or Surgical Treatment or Attention."—The defendant insurance company issued a policy of insurance Feb. 2, 1942 on the life of Pauline Kahn in which Herman Kahn was named as beneficiary. The policy provided that

> if within two years prior to the date of issue of this Policy the Insured has received institutional, hospital, medical or surgical treatment or attention, and the insured or any claimant under the Policy fails to show that the condition occasioning such treatment or attention was not of a serious nature or was not material to the risk, this Policy shall be voidable by the Company . . . unless reference to such institutional, hospital, medical or surgical treatment or attention is endorsed on this Policy by the Company. . . .

From January 1940 to January 1942 the insured submitted to more than one hundred treatments from a chiropractor for "shortness of breath, obesity, tiredness, menopause and various minor ailments such as colds and things of that sort." Admittedly, the chiropractic treatments were administered to the insured "for a serious condition or ailment." The insured died Jan. 12, 1943 and the insurance company refused to pay under the policy, contending that "within two years prior to the date of issue of the policy the insured received medical treatment or attention, and reference to such medical treatment or atten-

tion is not endorsed on the policy and the defendant (the insurance company) has declared the policy void." The beneficiary brought suit on the policy. At the close of the evidence the trial court instructed the jury that "there is no proof of any medical treatment of this woman at any time." From a verdict and judgment for the beneficiary the insurance company appealed to the supreme court of New Jersey.

The question here for determination, said the supreme court, is whether or not treatments or adjustments by a chiropractor are "medical or surgical treatment or attention" as used in the policy of life insurance involved. The word "medical" means "of, pertaining to, or dealing with, the healing art, or the science of medicine; especially in the narrower sense; as, medical profession; medical services; medical jurisprudence." The word "medicine" is defined as "the science and art dealing with the prevention, cure or alleviation of disease; in a narrower sense, that part of the science and art of restoring and preserving health which is the province of the physician as distinguished from the surgeon and obstetrician." Webster's New International Dictionary. In administering the chiropractic adjustments to the insured, continued the court, the chiropractor held himself out as attempting to prevent, cure or alleviate the conditions from which his patient suffered. The legislative history in connection with the practice of chiropractic is illuminating. By chapter 4, Laws, 1920, the New Jersey legislature enacted a statute entitled "An Act to regulate the practice of chiropractic." The following year that act was repealed and the legislature enacted a supplement to "An act to regulate the practice of medicine and surgery, to license physicians and surgeons, and to punish persons violating the provisions thereof." Laws, 1921, chapter 136. Through the revision of 1937 and as recently as Laws, 1939, chapter 115, the subject of chiropractic has been dealt with by the legislature under the general heading of "An act to regulate the practice of medicine and surgery." The effect of chapter 136, Laws, 1921, and the subsequent acts amendatory and supplemental thereof was to grant to chiropractors a limited license to practice medicine. In *State Board of Medical Examiners* v. *Maza*, 153 A. 259, 9 N. J. Misc. 171, the supreme court said:

> The precise question therefore is whether chiropractic is a branch of medicine or surgery. Evidently the Legislature elected so to regard it, when after passing the "Act to regulate the practice of chiropractic," chapter 4 of the Laws of 1920, it repealed it the following year by chapter 136 of the Laws of 1921 (P. L., at p. 268), and provided for "limited licenses" under the Medicine and Surgery Act. . . . We consider that it was entirely within the power of the legislature to label chiropractic as a branch of medicine or surgery.

There have been a number of cases, continued the supreme court, of which *State Board of Medical Examiners* v. *Maza, supra; Heintze* v. *New Jersey, etc., Medical Examiners*, 107 N. J. L. 420, 153 A. 253, affirmed 110 N. J. L. 24, 163 A. 892; *Miller* v. *State Board of Medical Examiners*, 167 A. 740, 11 N. J. Misc. 653, are typical, which deal with the convictions of chiropractors for engaging in the practice of medicine. A close scrutiny of these cases will in each instance disclose that the convictions are based on the performance of acts by the chiropractors which went beyond the scope of the limited license that was issued to them, or with the practice of chiropractic by unlicensed persons. We find nothing in that line of cases incompatible with the holding that a chiropractor practicing within the limits of his license is engaged in the practice of medicine. We believe that the trial court took too narrow a view of the word "medical" as used in the policy under consideration. Considering the legislative action referred to, it seems indisputable that the adjective "medical" is used in the broad generic sense comprehended by the definition given and is inclusive of the practice of chiropractic. The undisputed evidence disclosing the treatments within the two year period and reference to such treatments not having been endorsed on the policy as required, or disclosed in the application, it was the duty of the trial court to direct a verdict in favor of the insurance company.

The judgment in favor of the beneficiary was reversed and judgment was entered in favor of the insurance company.—*Kahn v. Metropolitan Life Ins. Co., 41 A. (2d) 329 (N. J., 1945).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and Examining Boards in Specialties were published in THE JOURNAL, April 14, page 1012.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 26-28. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.

ALASKA: Juneau, September. Sec., Dr. W. M. Whitehead, Box 561, Juneau.

ARKANSAS:* *Eclectic.* Little Rock, June 7. Sec., Dr. C. H. Young, 1415 Main St., Little Rock. *Medical.* Little Rock, June 7-8. Sec., Dr. D. L. Owens, 701 Main St., Little Rock.

CALIFORNIA: *Oral.* San Francisco, May 20. *Written.* San Francisco, July 9-12. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

DELAWARE: *Examination.* Dover, July 10-12. *Reciprocity.* Dover, July 17. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

FLORIDA:* Jacksonville, June 25-26. Sec., Dr. Harold D. Van Schaick, 2736 S. W. Seventh Ave., Miami 36.

IDAHO: Boise, July 10. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, June 26-28. Superintendent of Registration, Department of Registration and Education, Mr. Philip Harman, Springfield.

INDIANA: Indianapolis, Aug. 28-30. Sec., Board of Medical Registration & Examination, Dr. W. C. Moore, 301 State House, Indianapolis 4.

KANSAS: Kansas City, June 28-29. Sec., Board of Medical Registration & Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City 10.

KENTUCKY: Louisville, June 18-20. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville 2.

LOUISIANA: June. Sec., Dr. R. B. Harrison, 1507 Hibernia Bank Bldg., New Orleans 12.

MARYLAND: *Medical.* Baltimore, June 19-22. Sec., Dr. J. T. O'Mara, 1215 Calhedral St., Baltimore. *Homeopathic.* Baltimore, June 19-20. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MINNESOTA:* Minneapolis, June 5-6. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Bldg., St. Paul 2.

MISSOURI: St. Louis, June 7-9. Sec., State Board of Health, Miss Erma E. Nixon, State Capitol Bldg., Jefferson City.

MONTANA: Helena. Oct. 1-3. Sec., Dr. O. G. Klein, First Nat'l. Bank Bldg., Helena.

NEVADA: Carson City, May 7. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW JERSEY: Trenton, June 19-20. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NORTH DAKOTA: Grand Forks, July 3. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Endorsement.* Columbus, April. *Examination.* Columbus, June 18-21. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA:* Oklahoma City, June 14-16. Sec., Dr. J. D. Osborn, Jr., Frederick.

OREGON:* *Reciprocity.* Portland, April 28. Sec., Dr. L. S. Besson, 608 Failing Bldg., Portland 4.

SOUTH CAROLINA: Columbia, June 25-27. Sec., Dr. N. B. Heyward, 1329 Blandina St., Columbia.

SOUTH DAKOTA:* Pierre, July 17-18. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, State Capitol, Pierre.

TEXAS: Galveston, June 4-6. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

VERMONT: Burlington, June. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA:* Richmond, June 20-23. Sec., Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

WASHINGTON:* Seattle, July 16-18. Sec., Department of Licenses, Miss Nell Adams, Olympia.

WEST VIRGINIA: Charleston, July 5-7. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston 5.

WISCONSIN:* Milwaukee, June 26-28. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

CONNECTICUT: June 9. Address State Board of Healing Arts, 250 Church St., New Haven 10.

DISTRICT OF COLUMBIA: Washington, April 23-24. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: DeLand, June 1. Final date for filing application is May 17. Sec., Dr. J. F. Conn, John B. Stetson University, DeLand.

MICHIGAN: Ann Arbor and Detroit, May 11-12. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

NEBRASKA: Omaha, May 1-2. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln.

NEW MEXICO: Santa Fe. May 6-7. Sec., Miss Marion M. Rhea, State Capitol, Santa Fe.

RHODE ISLAND: Providence, May 16. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: Yankton, June 19. Sec., Dr. G. M. Evans, Yankton.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1935 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

29:1-142 (Jan.) 1945

*Neurovascular Syndrome Produced by Hyperabduction of Arms. I. S. Wright.—p. 1.
Momentary Atrial Electrical Axes: II. Atrial Flutter, Atrial Fibrillation and Paroxysmal Tachycardia. G. M. Decherd, A. Ruskin and G. Herrmann.—p. 20.
Anginal Syndrome as Manifestation of Hyperactivity of the Carotid Sinus. M. Friedman.—p. 37.
*Physiologic Effects of Carbon Dioxide Water Baths on Alveolar Carbon Dioxide Tension, Skin Temperature and Respiratory Metabolism. W. S. McClellan, M. A. Lessler and Alice T. Doulin.—p. 44.
Electrocardiograms in Which Main Ventricular Deflections Are Directed Downward in Standard Leads. E. Goldberger and S. P. Schwartz. —p. 62.
Prophylactic Use of Lanatoside C in Auricular Paroxysmal Arrhythmias. R. M. Tandowsky.—p. 71.
Observations on Syndrome of Short PR Interval with Long QRS. E. R. Movitt.—p. 78.
Congenital Heart Disease: Tricuspid Atresia and Mitral Atresia Associated with Transposition of Great Vessels. L. J. Manhoff Jr. and J. S. Howe.—p. 90.
*Vegetative Endocarditis Caused by Higher Bacteria and Fungi. P. R. Beamer, E. H. Reinhard and I. I. Goodof.—p. 99.
Influence of Age on Blood Pressure Response to Cold Pressor Test. H. I. Russek and B. L. Zohman.—p. 113.

Neurovascular Syndrome from Hyperabduction of Arms.—Wright describes a neurovascular syndrome produced by hyperabduction of the arms. This is capable of producing gangrene secondary to occlusion of the subclavian artery and neurologic sensory complaints, probably secondary to stretching, and ischemia of the brachial plexus trunks. There are two zones of stretching, torsion and pinching which contribute to the production of this syndrome: (*a*) the point at which the axillary-subclavian vessels and the trunks of the brachial plexus pass posterior to the pectoralis minor muscle and beneath the coracoid process and (*b*) the point at which the subclavian vessels and the trunks of the plexus pass between the clavicle and the first rib. Four patients developed their symptoms as the result of prolonged sleeping in the supine position with their arms hyperabducted; in each case this resulted in arterial occlusion or stretching of the involved nerve trunks. In case 5 the symptoms were aggravated by a double injury involving the right shoulder. In other cases the syndrome has developed as the result of occupational hyperabduction. It is recommended that persons whose pulses can be occluded in the hyperabducted position refrain from sleeping or working with their arms in that position. Attention should be paid to the pulse and complaints of paresthesias and numbness from patients whose arms are in hyperabduction on operating tables, in splints or in casts, in order to avoid neurovascular complications.

Effects of Carbon Dioxide Water Baths.—McClellan and his co-workers report observations on changes which occur in the alveolar carbon dioxide tension, the skin temperature and the respiratory metabolism of human subjects who have been submerged in baths of either carbon dioxide water or plain water. The alveolar carbon dioxide tension showed a 5 to 10 per cent rise during baths in the carbon dioxide water and returned to the resting level about twenty minutes after the bath. There was no significant change during baths in plain water. While there was no essential differences in the skin temperatures during carbon dioxide and plain water baths, when bath temperatures were between 85 and 90 F. the skin temperature was from 0.9 to 1.8 degrees F. higher in carbon dioxide than in plain water when the baths were between 95 and 100 F. A hyperemia was noted over the immersed area of the skin when the patients emerged from the carbon dioxide water baths. This was noted at all the temperatures used and was not present when the subject emerged from the plain water baths. There was a considerable increase in the elimination of carbon dioxide in the expired air during the time the patient was in the mineral water bath. There was an increase in the respiratory minute volume during the mineral water bath which did not occur with the plain water bath. The evidence supports the theory that this extra carbon dioxide is obtained by absorption of the carbon dioxide in the water through the skin and its subsequent elimination through the lungs. The authors point out that justification for the use of mineral water baths containing carbon dioxide in the program of treating disorders of the heart and circulation has frequently been questioned by thoughtful physicians who say that the results are entirely due to mental and psychologic factors. The authors think that the data presented in this communication show that they have definite physiologic effect.

Endocarditis Caused by Higher Bacteria and Fungi.—Beamer and his associates describe 2 cases of vegetative endocarditis, of which 1 was caused by Actinomyces graminis and the other by Histoplasma capsulatum. Ten previously reported cases of vegetative endocarditis caused by higher bacteria, yeasts or fungi are reviewed and compared with the present cases. In the presence of signs and symptoms of vegetative endocarditis, negative blood cultures by routine procedures may suggest a less common causal agent. To detect these, a longer incubation period may have to be allowed. Certain higher bacteria, yeasts and fungi, although they can develop on ordinary blood agar or carbohydrate mediums, do not "grow out" as rapidly as the true bacteria. Histoplasma capsulatum may require an incubation period of twelve days or more but has also been observed as early as the fourth or sixth day. Actinomyces frequently requires four or five days to produce visible growth.

American Journal of Clinical Pathology, Baltimore

14:549-592 (Nov.) 1944

Carcinoma of Pancreas: Study of Neoplastic Invasion of Nerves and Its Possible Clinical Significance. J. F. Drapiewski.—p. 549.
Salmon, Geist, Salmon, Frank Six Hour Rat Test for Pregnancy. B. S. Kline.—p. 557.
Tripolar Mitoses in Non-Neoplastic Lesions. M. G. Bohrod.—p. 563.
Clinical Bacteriology and Cytology of Some Ocular Infections. C. Weiss and Marian C. Shevsky.—p. 567.
Biologic Diagnosis of Tuberculosis: Quantitative Animal Evaluation Tests on Syrian Hamster and Guinea Pig. H. J. Corper and M. L. Cohn.—p. 571.
Case of Erythroblastosis Caused by Immunization of Rh Positive Mother by Rh Factor. R. K. Waller, P. Levine and Irene Garrow.—p. 577.
So-Called Granular Cell Myoblastoma of Thigh with Organoid Structure. P. H. Hartz.—p. 582.
Aneurysm with Rupture of Submucosal Artery in Jejunum: Case Report. J. Levine and A. deT. Valk.—p. 586.
Diabetes Mellitus in Cat. K. E. Landé.—p. 590.

American Journal of Diseases of Children, Chicago

69:1-70 (Jan.) 1945

Random Thoughts on Position of Pediatrics: Presidential Address. J. L. Gamble.—p. 1.
*Alum Precipitated Diphtheria Toxoid for Inoculation of Persons Exposed to Whooping Cough. J. Muñoz Turnbull.—p. 5.
Psychic Trauma of Operations in Children and Note on Combat Neurosis. D. M. Levy.—p. 7.
Resistance of Cotton Rats to Virus of Poliomyelitis as Affected by Intake of Vitamin B Complex, Partial Inanition and Sex. H. M. Weaver, with technical assistance of Norma Hastings and Helen Ammon.—p. 26.
Generalized Vaccinia in Eczematous Child: Demonstration of Virus and Comment on "Kaposi's Varicelliform Eruption." F. B. Hershey and W. E. Smith.—p. 33.
Salicylate Poisoning: Report of 4 Cases. Mary M. Troll and Maud L. Menten.—p. 37.

Diphtheria Toxoid for Persons Exposed to Whooping Cough.—Muñoz Turnbull observed that 9 children who had been inoculated with alum precipitated diphtheria toxoid while exposed to siblings with pertussis were protected against whooping cough. He has observed 61 exposed children under conditions which do not warrant the doubt that opportunity for contagion existed, since all of these children lived in the same houses and many slept in the same bedrooms as 1 or more siblings who had whooping cough. He suggests synergy of

two antigens, Bacillus pertussis and diphtheria toxoid to explain the improved immunization response. He considers the child as protected if he had been inoculated before or just at the time his cough began and if he did not cough for more than ten days. The doses of alum precipitated diphtheria toxoid used were 0.5 cc. for infants from birth to the age of 3 months, 1 cc. for infants from 3 to 12 months old and 1.5 cc. for those above 1 year of age. The injections were made every week subcutaneously in the deltoid region, with a maximum of three injections. Most of the protected subjects who were exposed to pertussis coughed for several days after being inoculated, the maximum length of time being six to ten days. Others did not cough at all. The method failed in 4 cases, that is in 6⅔ per cent.

American Journal of Hygiene, Baltimore

41:1-136 (Jan.) 1945

Bionomics of Pediculosis Capitis: I. Experiments in Rearing Human Lice on Rabbit. W. A. Davis and E. J. Hansens.—p. 1.
Id. II. Further Studies of Treatment for Pediculosis Capitis with Phenyl Cellosolve. E. J. Hansens.—p. 5.
Zoologic and Histologic Modification of Distemper Virus by Ferret Passage. R. G. Green.—p. 7.
*Occurrence of Poliomyelitis Virus in Tonsils and Stools of Noncontacts During an Interepidemic Period. J. F. Kessel and F. J. Moore.—p. 25.
Chlorination of Human, Monkey Adapted and Mouse Strains of Poliomyelitis Virus. J. D. Trask, J. L. Melnick and H. A. Wenner, with technical assistance of R. Joiner.—p. 30.
Effect of Bacterial Toxins on Tumors: VII. Tumor-Hemorrhage Factor in Bacteria. P. A. Zahl, M. P. Starr and S. H. Hutner.—p. 41.
Experimental Production and Chemoprophylaxis of Corynebacterium Diphtheriae Infection in Chick Embryo. Te'un T'ung.—p. 57.
Effect of Dietary Changes on Avian Malaria. M. M. Brooke.—p. 81.
Studies on Plasmodium Gallinaceum Brumpt: I. Incidence and Course of Infection in Young Chicks Resulting from Single Mosquito Bites. G. R. Coatney, W. C. Cooper and V. I. Miles.—p. 109.
Id.: II. Incidence and Course of Infection in Young Chicks Following Inoculation of Infected Salivary Glands. G. R. Coatney, W. C. Cooper and Helen L. Trembley.—p. 119.
Experimental Study of Mixed Infections with Plasmodium Cathemerium and Plasmodium Lophurae in Ducks. F. Wolfson.—p. 123.

Poliomyelitis in Noncontacts During Interepidemic Period.—Kessel and Moore investigated the incidence of poliomyelitis virus in noncontacts during interepidemic periods. Tonsils and stools were collected from 136 patients coming to the Los Angeles County Hospital for routine tonsillectomies. These patients were divided into 49 groups. A pool of tonsils and a pool of stools were prepared from the members of each group, so that there were 49 tonsil pools and 49 stool pools examined in this series, the usual number of persons contributing to a pool being 3. Virus was recovered from 3 tonsil pools and 3 stool pools. One of these tonsil pools and one stool pool were from the same group of 3 persons. At least 5 of 136 persons harbored virus either in their tonsils or in their stools. The survey was performed during an interepidemic period and all but one of the positive findings were obtained during the last three months of this period. This one positive was encountered during the first month of a major outbreak.

American J. Obstetrics and Gynecology, St. Louis

49:1-158 (Jan.) 1945

Injection Study of Uterine Blood Vessels. R. L. Faulkner.—p. 1.
*Relationship of Glycogen to Problems of Sterility and Ovular Life. E. C. Hughes.—p. 10.
Pelvic Lymphadenectomy in Treatment of Cervical Cancer. D. G. Morton.—p. 19.
Pregnancy and Otosclerosis. E. D. Allen.—p. 32.
*Therapeutic Regimen for Eclampsia, Based on Personally Conducted Series of 142 Consecutive Cases Without Maternal Fatality. R. E. Arnell.—p. 49.
Failure of Conservative Treatment of Eclampsia. C. P. Huber.—p. 81.
Study of 250 Cases of Placenta Previa. W. F. Seeley.—p. 85.
Analysis of Sterility Studies in Female. R. E. Nicodemus and L. F. Ritmiller.—p. 95.
Management of Abruptio Placentae. G. W. Gustafson.—p. 103.
Treatment of Urinary Infections with Sulfasuxidine (Succinylsulfathiazole). H. S. Everett, R. B. Scott and P. P. Steptoe.—p. 114.
Maternity Care in United States—Planning for Future. E. E. Dailey.—p. 128.

Glycogen and Sterility.—Hughes asserts that glycogen is present in abundance in all parts of the reproductive system. Glycogenesis and glycogenolysis in the endometrium involve the presence of an enzyme or enzymes. The author describes enzyme determinations on endometrial tissues and studies on the distribution of glycogen in the endometrium, on the relationship of glycogen and enzyme concentration to sterility and on the relationship of glycogen and enzymes to pregnancy and spontaneous abortion. Studies were made on 140 women who presented themselves because of sterility. Ovulation probably does not occur when the endometrium remains in the follicular phase, the glycogen is absent or diminished and the enzyme production is low. Opportunities for pregnancy in these women are few even after hormonal stimulation. Women in whom the endometrium proceeds to the progestational phase possess relatively larger amounts of glycogen but still have a low enzyme output. They conceive without difficulty; however, the chances of survival of the ovum are not good and spontaneous abortion results. These women were more amenable to treatment, but it should be instituted prior to pregnancy and during the early days of gestation. Ten patients in this series were given small doses of estrogen before pregnancy to improve glycogen and enzyme production. After pregnancy occurred, combined treatment of small doses of estrogen and progesterone were prescribed during the first trimester and the early part of the second trimester. These women previously had aborted before the fourth month but, after treatment, proceeded uneventfully to term. The author concludes that glycogen is an important material of the endometrium and that its metabolism is probably influenced by the ovarian hormones.

Therapy of Eclampsia.—In the 142 consecutive cases of eclampsia reviewed in this paper by Arnell not a single maternal fatality resulted. The management employed is neither new nor original, but the details of its application are not always carried out with the care with which they are applied in this series. The plan is based on an ultraconservative concept of management: constant observation of each eclamptic patient by an experienced staff throughout the entire treatment, which permits careful integration of the various therapeutic components into an individualized regimen rather than their application as a standard routine of treatment. Special factors of success include (*a*) frequent changes of posture plus the use of oxygen therapy and of aspiration during the acute phases of the disease, (*b*) limitation of sedation to the dosage necessary to control convulsions and hyperirritability, (*c*) limitation of dextrose therapy to the smallest amount necessary to insure a satisfactory urinary output, with a return to oral fluids in maximum amount as soon as the swallowing reflex returns, (*d*) delaying labor unless it ensues spontaneously until the optimum recovery from the acute stage has taken place, (*e*) induction of labor at the optimum time and by the simplest possible method and (*f*) limitation of operative intervention and the use of local analgesia for all forms of operative work. Neither the patients' future health nor their subsequent pregnancies are in any way jeopardized by this plan of management. Lack of adequate prophylaxis was the factor chiefly responsible for the development of eclampsia in these 142 cases.

Archives of Neurology and Psychiatry, Chicago

53:1-90 (Jan.) 1945

Intraspinal Lipomas: Report of Cases; Review of Literature, and Clinical and Pathologic Study. G. Ehni and J. G. Love.—p. 1.
Phenomenon of Visual Extinction in Homonymous Fields and Psychologic Principles Involved. M. B. Bender and L. T. Furlow.—p. 29.
*Mental Symptoms Following Head Injury: Statistical Analysis of 200 Cases. A. Adler.—p. 34.
Delirium: III. Electroencephalographic Changes Associated with Acute Alcoholic Intoxication. G. L. Engel and M. Rosenbaum.—p. 44.
Action of Barbiturates on Cerebral Cortex: Electroencephalographic Studies. Mary A. B. Brazier and J. E. Finesinger.—p. 51.
Encephalitis Associated with Herpes Zoster: Report of Case. S. Krumholz and J. A. Luhan.—p. 59.
Chronic Chloroform Poisoning: Clinical and Pathologic Report of Case. G. Heilbrunn, E. Liebert and P. B. Szanto.—p. 68.

Mental Symptoms Following Head Injury.—From a total of 430 patients with head injuries admitted to the Boston City Hospital between July 1942 and September 1944 a series of 200 was selected for study by Adler. Of this group 63 developed mental symptoms after head injury. Pretraumatic factors that seemed to have an influence on the incidence of post-traumatic mental symptoms were advancing age, the married status in men, nationality, occupation, the type of injury and a history of anxiety. Post-traumatic factors that seemed to be important were the traumatic amnesia accompanying injuries, a prolonged stay in the hospital and the

presence of headaches and dizziness. In particular, prolonged duration of headaches and dizziness was associated with a high incidence of mental symptoms. Other physical sequelae of the injury lasting more than six months had an equally high incidence of mental symptoms. Post-traumatic nightmares were regularly associated with additional symptoms of anxiety. Certain environmental complications, occupational difficulties in particular, and problems of litigation and compensation were correlated with a high incidence of post-traumatic mental symptoms. Of the patients with post-traumatic mental symptoms the largest group, 48 patients, had post-traumatic anxiety states. Twenty-three of these patients had previously normal personalities, whereas the remainder had preexisting psychiatric liabilities. Anxiety symptoms were the predominant mental features in the post-traumatic neuroses. Symptoms of personality change only, such as euphoria, moodiness and apathy, in addition to changes in the intellectual status, were manifested by 7 patients with severe head injuries. Mental symptoms, particularly symptoms of anxiety, are, with headaches and dizziness, the commonest symptoms in convalescence. They are also the most common symptoms and major cause of prolonged disability.

California and Western Medicine, San Francisco

62:5-50 (Jan.) 1945

Industrial Medicine in Wartime: Widening Field of Industrial Medicine. R. T. Johnstone.—p. 5.
Interrelationships of Selective Placement and Rehabilitation. C. Kuh. —p. 6.
How May a Worker Receive Adequate Medical Care? A. C. Dick.—p. 8.
Epileptic in Industry. W. G. Lennox.—p. 9.
Tuberculosis in Industry. H. W. Bosworth.—p. 10.
Venereal Disease Control in Industry. H. T. Castberg.—p. 10.
Place of Dentistry in Industry. H. M. Kulstad.—p. 11.
Use of Vitamin Supplements in Industry. H. W. Haggard.—p. 12.
Control of Toxic Exposures. H. Dierker and P. G. Brown.—p. 13.
Treatment of More Common Industrial Emergencies. R. T. Johnstone. —p. 14.
Sciatic Syndrome of Traumatic Origin. R. B. Raney.—p. 15.
New Concepts in Therapy of Industrial Contact Dermatitis. N. P. Anderson.—p. 17.
Emergency Treatment of Head Injuries. W. J. Van Den Berg.—p. 18.
Industrial Urologic Injuries. A. H. Peacock.—p. 19.
Treatment of Soft Tissue Injuries to Hand. Anonymous.—p. 20.
Hand Fractures in Industry. C. C. Cutting.—p. 21.
Treatment of Industrial Eye Injuries. J. N. Osburn.—p. 22.
Treatment of Burns. J. C. Rooney.—p. 23.

Canadian Journal of Public Health, Toronto

36:1-46 (Jan.) 1945

New Methods for Selection of Public Health Personnel. R. M. Atwater and L. D. Long.—p. 1.
State of Health of People of Canada in 1943. J. J. Heagerty and J. T. Marshall.—p. 6.
Personnel Policies and Practices in Public Health Nursing. Dorothy Deming.—p. 18.
Fight Against Tuberculosis in Montreal. L. Ladouceur.—p. 22.
Importance of Balance Between Vital Registration and Vital Statistics. H. L. Dunn.—p. 27.
Reduction in Number of Mongolian Defectives—Result of Family Limitation. G. Beall and R. G. Stanton.—p. 33.

Illinois Medical Journal, Chicago

87:3-70 (Jan.) 1945

*Sulfamerazine: Clinical Study of 200 Pneumonia Patients. I. F. Volini, G. M. Engbring and H. A. Schorsch.—p. 13.
Review of Old and Modern Treatment of Asphyxia Neonatorum. I. A. Abt.—p. 19.
Penicillin Therapy in Meningitis Secondary to Basal Skull Fracture. K. P. Johnston.—p. 26.
Penicillin in Gas Gangrene: Report of 2 Cases. W. J. Pickett.—p. 29.
Public Health Nurse of Today. W. H. Tucker.—p. 31.
Pattern of Growth. J. Carey.—p. 33.
Low Back Pain from Standpoint of General Surgeon. J. B. Moore. —p. 35.
Cranial Anomalies. H. Josephy.—p. 39.
Medical Treatment of Biliary Tract Disease. R. E. Dolkart.—p. 43.

Sulfamerazine in Pneumonia.—Volini and his associates used sulfamerazine in the treatment of 200 patients with pneumonia at Cook County Hospital in Chicago. Blood drug levels were estimated in most cases at least once and daily when the response was delayed. A white blood cell count was made and a urine analysis for p_H, specific gravity, crystalluria and blood was done. Specific gravity of the urine was taken as a guide for adequate fluid output. The aim was to keep this below 1.015 to prevent renal reactions. A daily fluid intake of 3,000 cc. was encouraged. The authors found that sulfamerazine is more rapidly and completely absorbed and more slowly excreted than sulfadiazine. Therapeutic blood concentration is maintained on smaller doses less frequently administered. The percentage of conjugation is about the same as for sulfadiazine, averaging 11. The value is much higher in cases of toxic nephritis. Clinical results parallel those following sulfadiazine. Toxic reactions are fewer, and this is probably due to the smaller total amounts of the drug required. The average duration of treatment is no longer on the lower dosage schedule. The complications of pneumonia, particularly empyema, were observed much less frequently. Sulfamerazine offers definite advantages over sulfadiazine and possesses equal therapeutic effectiveness.

Indiana State Medical Assn. Journal, Indianapolis

38:1-32 (Jan.) 1945

Radical versus Conservative Treatment for Gynecologic Conditions. V. S. Counseller.—p. 1.
Evaluation of Penicillin in Ocular Therapeutics. J. G. Bellows.—p. 4.
Comparison of Vaccine Products and Brucellergen in Intradermal Test in Brucellosis. D. L. Urschel.—p. 8.

38:33-76 (Feb.) 1945

Functional versus Organic Heart Disease. N. C. Gilbert.—p. 33.
Management of "First Priority" Surgical Casualty from Anesthetic Viewpoint. G. Shortz.—p. 37.
Diagnosis and Prognosis of Bundle-Branch Block. H. N. Middleton. —p. 40.
Responsibilities of Local Health Officer. F. R. N. Carter.—p. 45.

Journal of Aviation Medicine, St. Paul

15:353-442 (Dec.) 1944

Physical Competency and Performance. M. Y. McCormick.—p. 355.
Legal Basis of Medical Safety in Aviation. T. H. Sutherland.—p. 360.
Effects of Altitude Anoxia on Respiratory Processes. H. F. Helmholz Jr., J. B. Bateman and W. M. Boothby.—p. 366.
Effects of Carbon Monoxide and Altitude on Visual Thresholds. R. A. McFarland, F. J. W. Roughton, M. H. Halperin and J. I. Niven. —p. 381.
Relations Between Force, Major Injuries and Aircraft Structure, with Suggestions for Safety in Design of Aircraft. G. M. Hass.—p. 395.
Variations in Illumination of the Depth Perception Apparatus. H. W. Seiger.—p. 401.

Journal of Bone and Joint Surgery, Boston

27:1-178 (Jan.) 1945. **Partial Index**

*Osteotomy of Spine for Correction of Flexion Deformity in Rheumatoid Arthritis. M. N. Smith-Petersen, C. B. Larson and O. E. Aufranc. —p. 1.
Osteochondritis Dissecans of Supratrochlear Septum. H. S. Morton and W. E. Crysler.—p. 12.
*Retardation of Bone Growth by Wire Loop. S. L. Haas.—p. 25.
Concentric Arthrodesis of Ankle Joint: Transmalleolar Approach. R. Anderson.—p. 37.
Arthrodesis of Ankle Joint for Old Painful Fractures. H. Hallock. —p. 49.
Experimental Production of Scoliosis in Rats and Mice. J. R. Schwartzmann and M. Miles.—p. 59.
Congenital Stricture of Spinal Canal. M. A. Sarpyener.—p. 70.
Some Remarks on Three Common Fractures: 1. Fractures of Carpal Scaphoid; 2. Fractures of Head of Radius; 3. Fractures of Medial Malleolus. D. M. Meekison.—p. 80.
Internal Derangements and Fractures Involving the Knee: Results of 150 Consecutive Arthrotomies Performed at Station Hospital. W. F. Stanek.—p. 86.
Method for Studying Healing of Bone. A. Marshak and R. L. Byron. —p. 95.
Intervertebral Disk: Its Microscopic Anatomy and Pathology: Part I. Anatomy, Development and Physiology. M. B. Coventry, R. K. Ghormley and J. W. Kernohan.—p. 105.
Sacral Fractures and Injuries to Cauda Equina. J. G. Bonnin.—p. 113.
Fixation of Fractures of Upper Femur and Hip with Threaded, Hexagon Headed, Stainless Steel Screws of Fixed Length. P. H. Harmon. —p. 128.
Measurement of Muscle Strength. H. Milch.—p. 137.
Operation for Correction of Locking of Proximal Interphalangeal Joint of Finger in Hyperextension. J. T. Bate.—p. 142.
Bilateral Symmetrical Brachymetacarpalia and Brachymetatarsalia: Report of Case. F. J. Fischer and R. E. VanDemark.—p. 145.
Multiple Osteochondral Bodies in Synovial Membrane of Knee Joints in Case of Mixed Rheumatoid and Degenerative Arthritis. J. H. Turkell.—p. 149.
Treatment for Displaced Fracture of Pelvis. C. M. Silver and H. W. Rushbridge.—p. 154.

Osteotomy of Spine for Correction of Flexion Deformity.—Smith-Petersen and his associates report a surgical procedure for correction of the flexion deformity of the spine in rheumatoid arthritis aimed at the facets, articular processes

and adjacent laminas. Osteotomy of these structures, with excision of sufficient bone, should allow corrective leverage to be transmitted to the intervertebral disks and longitudinal ligaments, overcoming whatever resistance these may present. Through an incision in the median line at least three lumbar spinous processes are exposed. The second step consists in the incision and reflection of supraspinous and interspinous ligaments, followed by the subperiosteal reflection of muscle attachments from the spinous processes and laminas. On completion of the osteotomy, leverage in the direction of extension is applied by raising the head and foot of the operating table very slowly. This results in a gradual narrowing and final obliteration of the oblique spaces between the laminas and between the remnants of the articular processes. The obliquity of the osteotomy insures locking and prevents serious displacement. By means of delicate osteotomes, bone flaps are raised from the laminas adjacent to the osteotomy, and the bone lamellae obtained from the spinous processes are inserted by means of a bone-graft carrier. These grafts bridge the gap between the laminas and consequently hasten bony fusion in the corrected position. In closing the wound, close apposition of the split interspinous and supraspinous ligaments is important. Satisfactory results were obtained in 6 cases.

Retardation of Bone Growth by Wire Loop.—In a series of experiments on dogs Haas found that in every instance in which a wire loop was passed around the epiphysial cartilaginous plate in the frontal plane there was a loss in length growth of the bone. If the wire loop became unfastened, the hindering force was not so great and growth was retarded apparently in proportion to the remaining restraint of the wire to be overcome by the growing bone. In view of this experimental evidence the author attempted to control growth in children with discrepancies in leg lengths. In only 2 of the 5 patients on whom wiring operations have been performed has a sufficient time elapsed to draw conclusions. Because growth is relatively slow in man, determination of the practicability of the method of wiring the epiphysial plate described herein must await the results obtained after a long period. From the results obtained thus far on patients there is definite evidence of growth retardation, and a continuation of the method seems warranted. The operation should not be performed until sufficient ossification of the epiphysis has taken place; that is, after about 8 years of age.

Journal Neuropath. and Exper. Neurology, Baltimore

3:311-432 (Oct.) 1944

*Primary Sarcomatous Meningioma (Primary Sarcoma of Brain). J. H. Globus, S. Levin and J. G. Sheps.—p. 311.
Intracranial Lipoma: Report of 4 Cases. A. R. Vonderahe and W. T. Niemer.—p. 344.
*Herpetic Meningoencephalitis: Clinical-Pathologic Report of Case. G. B. Hassin and I. A. Rabens.—p. 355.
Case of Congenital Atresia of Foramina of Luschka and Magendie: Surgical Cure. A. E. Walker.—p. 368.
Effect of Adrenalectomy on Brain of White Rats. A. Weil and R. A. Groat.—p. 374.
Kernicterus Unassociated with Erythroblastosis Fetalis. F. M. Forster and R. A. McCormack.—p. 379.
Convoluted Vessels of Brain and Spinal Cord. R. Altschul.—p. 386.
Tumors in Spinal Canal in Childhood: II. Analysis of Literature of Subsequent Decade (1933-1942); Report of Case of Meningitis Due to Intramedullary Epidermoid Communicating with Dermal Sinus. W. B. Hamby.—p. 397.
Further Observations on Associational Pathways in Brain of Macaca Mulatta. P. Bailey, G. von Bonin, E. W. Davis, H. W. Garol and W. S. McCulloch.—p. 413.
Intracellular Body in Human Choroid Plexus Ependyma and Its Analogue in Retinal Pigment Layer Cells of Albino Rabbit. A. E. Taft.—p. 416.
Iron-Alum-Hematoxylin Staining Method for Myelinated Fibers. W. T. Niemer.—p. 419.

Primary Sarcoma of Brain.—Globus and his associates subjected to a thorough histopathologic study 150 meningiomas collected in the Neuropathology Laboratory of the Mount Sinai Hospital in New York. This survey revealed 16 sarcomatous meningiomas, of which 8 were selected for this study. The histologic character and local behavior of these tumors is not unlike that of sarcomas elsewhere. The location and distribution of some of them in the depth of the brain substance do not speak against their meningeal derivation and their true sarcomatous nature. The cells are usually undifferentiated small or oval, aggregated along blood vessels. In general, the cells exhibit a recession in the process of differentiation. Giant cells are frequent but are not essential for the diagnosis. Connective tissue, though varying in abundance, is present. The cellular constituents are traceable to derivatives of the pial component of the leptomeninges. Brain or spinal cord alterations in the proximity of the tumor are present and usually result from interference with the blood supply. The tumors are frequently multiple and often diffuse. They may give rise to visceral metastases.

Herpetic Meningoencephalitis.—Hassin and Rabens report the case of a man aged 48, who was admitted to the Mount Sinai Hospital in Chicago on May 20, 1935. A herpetic eruption along the ophthalmic branch of the fifth nerve was clinically complicated by a toxic condition of the central nervous system. There were confusion, urinary disturbances and a progressive febrile course. The patient died ten days after admission to the hospital and twenty days after the onset of the illness. The necropsy revealed vascular changes and degenerative nonvascular softening in the subcortex, especially in the pons, medulla and cornu ammonis, combined with a meningitis of both the vertex and the base of the brain, including some of the basilar nerves. Nerve cell changes were generally mild, but the nucleoli exhibited tinctorial changes and occasionally appeared vacuolated. The changes differed from those seen in encephalitis of the Economo type, African sleeping sickness, cerebral forms of poliomyelitis, typhus fever and other forms but much resembled the St. Louis type of encephalitis, equine encephalomyelitis and Borna disease of horses. A diagnosis of a specific form of encephalitis cannot be made from the pathologic picture without the knowledge of the history or additional laboratory studies (inoculations, immunologic observations and others). Absence of cell inclusions does not speak against the herpetic nature of encephalitis.

Journal of Pediatrics, St. Louis

26:1-106 (Jan.) 1945

Diagnosis and Management of Severe Infections in Infants and Children: Review of Experiences Since Introduction of Sulfonamide Therapy: III. Meningococcal Infections. D. Goldring, A. F. Hartmann and R. Maxwell.—p. 1.
*Intradermal Use of Convalescent Serum Against Measles: Preliminary Report. A. Bloxsom.—p. 32.
Generalized Obstructive Emphysema in Infants. W. E. Nelson and L. W. Smith.—p. 36.
Healed Asymptomatic Miliary Tuberculosis. K. E. Kassowitz.—p. 56.
Incidence of Enterozoic Parasitism in Children: Survey. R. L. Brown.—p. 61
Exanthem Subitum (Roseola Infantum): Report of 80 Cases. H. H. Clemens.—p. 66.
Intestinal Hernia with Eversion and Exstrophic Bladder. J. G. Sinclair.—p. 78.
Traumatic Rupture of Spleen, with Especial Reference to Its Characteristics in Young Children. M. S. Mazel.—p. 82.

Convalescent Serum Against Measles.—Bloxsom says that the epidemic of measles invading Houston, Texas, in 1944 was widespread and severe. There was high fever and a high incidence of complications. At the onset of the epidemic there was sufficient placental extract to give inoculations to all contacts desiring it, but the supply became exhausted during the last part of the epidemic. At this point serum could be obtained from 2 adults. From one the serum was withdrawn three days after the temperature was normal, and the rash was still present; from the other, one week after the temperature became normal. These serums were used intradermally on 38 children and 2 adults. The serum was given in 0.4 cc. amounts intradermally on successive days until 2 cc. was given. Thirty-four children and 2 adults remained free from measles. Two children developed uncomplicated measles before the course was completed. Two children developed attenuated measles fourteen days after the inoculations. It is believed that recent convalescent measles serum has enough measles antigen available to produce an active immunity when this serum is given intradermally in at least the amounts suggested. The intradermal employment provides an economical use of this product.

Maine Medical Association Journal, Portland

36:1-18 (Jan.) 1945

Trends in Public Health Planning. T. Parran.—p. 1.
Orthopedic Problem of Crippled Child. H. L. Wenger.—p. 4.

New England Journal of Medicine, Boston

232:63-94 (Jan. 18) 1945

Mechanism of Renal Complications in Sulfonamide Therapy. E. L. Prien.—p. 63.
Presidential Address: Role of Community Hospital in Postgraduate Teaching. W. G. Phippen.—p. 68.
Vitamin Content of Commercial Winter Goat's Milk. A. D. Holmes and others.—p. 72.
Syphilis. G. M. Crawford.—p. 76.

232:95-120 (Jan. 25) 1945

Waterhouse-Friderichsen Syndrome: Report of Case with Recovery. L. D. Weinberg and T. H. McGavack.—p. 95.
Casualties in South Pacific. H. E. Kennard.—p. 101.
*Stenosing Tendovaginitis at Radial Styloid Process (De Quervain's Disease). A. P. Aitken.—p. 105.
Syphilis. G. M. Crawford.—p. 107.

Tendovaginitis at Radial Styloid Process.—Stenosing tendovaginitis at the styloid process of the radius is also designated as de Quervain's disease. It occurs chiefly in women, and with the great increase in the employment of women in industry it is more frequently encountered than formerly. Unless properly diagnosed and treated, its victims are subjected to a prolonged and painful period of disability. Stenosing tendovaginitis is due to a thickening of the fibrous sheath that covers the tendons and the synovial sheaths of the abductor pollicis longus and the extensor pollicis brevis as they pass through the bony groove in the radial styloid. In the acute stage of the disease there is severe pain over the radial side of the wrist joint, especially on motion of the thumb. The pain is localized directly over the styloid of the radius, with radiation into both the thumb and forearm. Most patients when first seen have had pain for several weeks. Immobilization makes most patients comfortable, but when work is resumed the symptoms usually recur. Rest may allow edema to subside, but it does not cause the fibrous thickening to disappear. The treatment of choice is surgical. The sheath is split with a sharp knife throughout its length and its edges are retracted, exposing the underlying tendons and synovial sheaths. If adhesions are present between the sheaths and tendons, they are excised. Aitken also excises the edges of the fibrous sheath. No attempt is made to close the sheath over the tendons, the only closure required being that of the skin. A compression dressing is applied. Motion is started on the day after operation. Ordinarily work can be resumed two weeks after operation.

Pennsylvania Medical Journal, Harrisburg

48:322-416 (Jan.) 1945

Certain Unusual Clinical Pictures in Renal Disease. C. W. Greene.—p. 341.
Treatment of Staphylococcus Septicemia. J. A. Collins.—p. 345.
Refrigeration Anesthesia in Surgical Procedures. D. B. Pfeiffer and F. M. S. Patterson.—p. 349.

48:417-544 (Feb.) 1945

Realism in Extension of Public Relations. L. F. Foster.—p. 435.
Comparison of Value and Applicability of Caudal and Spinal Anesthesia in Obstetric Practice. T. L. Montgomery, F. S. Deming, H. Bumgardner and Elsie Reed.—p. 440.
*Tinea Capitis—Its Diagnosis and Treatment. T. W. Baer.—p. 447.
Care of Cancer Patient. S. P. Reimann.—p. 450.
Notes Concerning Some of More Frequent Skin Diseases Occurring During Pregnancy. L. Hollander and H. R. Vogel.—p. 454.
Research Possibilities in Physical Medicine. G. M. Piersol.—p. 462.
Coordination of Medical and Blue Cross Plans. L. H. Perry.—p. 467.

Tinea Capitis.—Baer states that tinea capitis, the fungous infection of the hair usually occurring in children before the age of puberty, is caused either by Microsporon audouini or by Microsporon lanosum. In the present epidemic all patients have been infected with M. audouini. This type of infection will be observed as scattered, large and small, semibald patches in the occipital and parietal regions of the scalp. These patches are scaly and the infected hairs are dull, lusterless and broken off. Wood's light, which consists of ultraviolet rays which are filtered through a special type of Corning glass, is not generally available. The author has used an inexpensive substitute, the Westinghouse Purplex lamp, which will fit into a standard light socket. The examination is made in a darkened room. With the lamp held close to the patient's scalp the infected hairs appear as bright, clear, bluish green stubs. With this simple examination one can make a provisional diagnosis of tinea capitis and rule out such possible confusing entities as alopecia areata, seborrhea, pediculosis, folliculitis decalvans and alopecia cicatrisata. If the species of fungus is to be identified, fluorescent hairs are plucked and planted on the surface of Sabouraud's agar medium in a test tube. The author used the trichophyton test in 70 cases of tinea capitis, but he regards it of no value. Microsporon audouini infection persists for a long time unless it is treated by x-ray epilation of the scalp. This therapeutic procedure should be done only by an experienced person with a carefully calibrated therapeutic x-ray apparatus. Chemical therapy for M. audouini infections is in the experimental stage.

Psychosomatic Medicine, Baltimore

7:1-70 (Jan.) 1945

Studies of Syncope: III. Differentiation Between Vasodepressor and Hysterical Fainting. J. Romano and G. L. Engel.—p. 3.
Psychic Concomitants in Wartime Injuries. H. I. Kupper.—p. 15.
Problem of Chronic Disease. G. St. J. Perrott.—p. 21.
Psychosomatic Disorders as Revealed by Thirteen Million Examinations of Selective Service Registrants. L. G. Rowntree.—p. 27.
Brain Waves and Clinical Features in Arteriosclerotic and Senile Mental Patients. W. T. Liberson and C. A. Seguin.—p. 30.
Brain Waves and Heredity in Mental Diseases. W. T. Liberson and C. A. Seguin.—p. 35.
Difference in Mental Reaction Between Children Suffering from Cerebral and Cerebellar Tumors. L. M. Davidoff.—p. 38.
Relationship of Antisocial Traits to Electroencephalogram in Children with Behavior Disorders. J. J. Michaels.—p. 41.

Radiology, Syracuse, N. Y.

44:1-106 (Jan.) 1945

Tropical Diseases of Interest to Radiologist. L. H. Garland.—p. 1.
Osteoporosis Circumscripta Cranii: Its Pathogenesis and Occurrence in Leontiasis Ossea and in Hyperparathyroidism. F. Windholz.—p. 14.
Significant Skeletal Irregularities of Hands. J. F. Holt and F. J. Hodges.—p. 23.
Tuberculosis of Greater Trochanter and Its Bursa. P. C. Briede.—p. 32.
*Thoracic Manifestations of Sarcoidosis. S. S. Bernstein and M. L. Sussman.—p. 37.
Roentgen Therapy of Mammary Carcinoma: Survival Study Based on 731 Cases. F. R. Gratzek and K. W. Stenstrom.—p. 44.
Roentgen Therapy in Diseases of Blood-Forming Organs. R. Isaacs.—p. 58.
Experimental Production of Extraskeletal Bone-Forming Neoplasms in Rat. W. F. Dunning and M. R. Curtis.—p. 64.

Thoracic Manifestations of Sarcoidosis.—According to Bernstein and Sussman pulmonary lesions occur with great frequency in sarcoidosis. This report is based on a series of 12 cases, of which 8 are studied roentgenologically. The first group includes cases of bilateral, frequently symmetrical, enlargement of the hilar and bronchial lymph nodes without evident pulmonary infiltration. A second group, probably the largest, includes cases of mediastinal adenopathy and variable degrees of infiltration into the pulmonary parenchyma. The infiltration ordinarily is strandlike and extends out more or less symmetrically from the hilus. A third form presents lesions easily simulating and roentgenologically indistinguishable from chronic miliary tuberculosis. A fourth type of the disease shows a discrete nodular infiltration with or without hilar adenopathy. A fifth type of x-ray appearance is that of diffuse and confluent infiltrations which may represent a transition from other forms of sarcoidosis and may easily simulate if not actually develop into tuberculosis. Bronchiectasis and other chronic pulmonary conditions are not easily excluded. The resemblance roentgenologically between pulmonary sarcoidosis and other conditions, particularly tuberculosis, may be so close that a diagnosis from the chest roentgenogram alone is not justified. *Biopsy, when possible, is the only satisfactory basis for diagnosis.

Rhode Island Medical Journal, Providence

27:633-698 (Dec.) 1944

Eye Signs in 200 Diabetics. H. C. Messinger.—p. 643.
Conditioned Reflex Treatment of Alcoholism. J. Thimann.—p. 647.
Helpful Hints in Nitrous Oxide-Oxygen Administration for Dental Surgery. H. M. Seldin.—p. 655.
Report of Case of Staphylococcus Bacteremia Treated with Sulfadiazine and Penicillin. J. K. Kenney.—p. 663.
Rupture of Lumbar Intervertebral Disks. C. S. Kubik.—p. 665.

South Carolina Medical Assn. Journal, Florence

41:1-26 (Jan.) 1945

Medicine After the War. V. Johnson.—p. 1.
Treating Diabetics with Insulin. W. R. Jordan.—p. 6.
Immunity to Diphtheria in Student Nurses. J. I. Waring.—p. 8.

41:27-54 (Feb.) 1945

Treatment of Burns. H. N. Harkins.—p. 27.
Medical Statistics of South Carolina: V. Status of Specialization of Physicians in State and Among Graduates of Medical Colleges of South Carolina. A. M. Lassck.—p. 30.
Choline in Treatment of Jaundice in Infancy (Case Report). Carolyn M. McCue.—p. 32.
History of Urology in South Carolina. J. J. Ravenel.—p. 34.

Southern Medical Journal, Birmingham, Ala.

38:1-84 (Jan.) 1945

Navy Medicine in War. L. Sheldon Jr.—p. 1.
Medicine in South Pacific. A. McMahon.—p. 7.
Army Air Forces Convalescent Training Program: Its Contribution to Medicine of Tomorrow. H. A. Rusk.—p. 12.
Medical Progress During Past Fifty Years. H. L. Kretschmer.—p. 16.
Rheumatoid Arthritis. T. D. Davis.—p. 20.
Significance and Management of Massive Bleeding from Upper Gastrointestinal Tract. W. E. Clark.—p. 24.
One Man's Contribution to Allergy. W. R. Graham.—p. 30.
Pulmonary Hypertensive Heart Disease. S. L. Zimmerman.—p. 33.
Chronic Urethritis in Men and Women. R. Deakin.—p. 38.
Nasal Surgery. W. R. McKenzie.—p. 42.
Conservative Treatment of Thromboangiitis Obliterans and Arteriosclerosis. P. S. Lowenstein.—p. 44.
Child Care During War and Peace. H. Casparis.—p. 49.
Modernization of Medical Education. C. O. Bailey.—p. 50.

38:85-160 (Feb.) 1945

Roentgenologic Manifestation of Malignancy of Colon. L. J. Whitehead.—p. 85.
"Lipiodol" Pulmonary Emboli Following Hysterosalpingography. M. A. Roblee and S. Moore.—p. 89.
Physiology and Pathology of Placenta: Study and Review. G. R. Osborn.—p. 94.
*Penicillin Therapy in Bronchiectasis. P. F. Stookey, I. H. Lockwood, H. L. Mantz, W. W. Buckingham, A. E. Upshur and B. Hibbard.—p. 98.
Preauricular Sinuses: Diagnosis and Treatment. R. M. Penick Jr.—p. 103.
Skin Manifestations of Some Common Internal Disorders. A. B. Cannon.—p. 105.
Clinical Significance of Glossitis and Cheilosis in Deficiencies of B Complex. D. Cayer, J. M. Ruffin and W. A. Perlzweig.—p. 111.
Average Diet of Southern County and Its Effects on Nutritional Status. D. F. Milam and W. J. Darby.—p. 117.
Observations on Topical Application of Sulfonamides. C. W. Lane.—p. 125.
Congenital Patent Ductus Arteriosus: Therapeutically Reversible Type of Heart Disease. T. Winsor and G. E. Burch.—p. 132.
Treatment of Esophageal Neoplasms: Plea for Active Therapy Plus Minimum Confinement. C. O. Patterson and M. O. Rouse.—p. 140.
Use of Curare in Anesthesia. S. C. Cullen.—p. 144.
Problems Involving Female Urethra: Suggestions as to Therapy. N. S. Moore.—p. 148.
Partial Gastrectomy for Duodenal Ulcer. B. Brooks and W. F. Meacham.—p. 150.

Penicillin in Bronchiectasis.—Stookey and his collaborators made daily bacteriologic studies on the sputums of 21 patients with bronchiectasis. One or more pathogens were present in each culture. Staphylococci were the most consistent and persistent of the pathogens. In the 21 cases under discussion 1,000,000 units of penicillin on the average was given in divided doses by intramuscular injection in some cases and by continuous intravenous drip in other cases. It was administered over a period of from eight to ten days. There were no side effects. The only significant change from the bacteriologic standpoint was a decrease in the number of colonies of hemolytic streptococci and staphylococci. There was slight reduction in the growth of the nonhemolytic organisms. In spite of this reduced growth the volume of sputum was not influenced. There was evidence of great clinical improvement. Approximately 20 per cent of persons with chronic cough responded to penicillin. In those who did respond the result was immediate. The morning sputum disappeared along with the cough in as short a period as ninety hours. The true bronchiectatic patient shows little or no response to the administration of penicillin. The chronic bronchitis associated with periods of activity and remission offers the best hope of a therapeutic response. Penicillin does not establish immunity, and recurrence is to be expected.

Surgery, St. Louis

16:815-972 (Dec.) 1944

Esophageal Duplications or Mediastinal Cysts of Enteric Origin. W. E. Ladd and H. W. Scott Jr.—p. 815.
Primary Lymphosarcoma of Breast. F. E. Adair and J. B. Herrmann.—p. 836.
Mixed Malignancy of Breast: Case Report of Combined Carcinoma and Sarcoma in Child, with Review of Literature. H. G. Smithy.—p. 854.
Boeck's Sarcoid: Report of Case Involving Stomach. I. Gore and A. M. McCarthy.—p. 865.
Compound Craniocerebral Injuries. W. J. German, B. S. Brody and S. C. Harvey.—p. 874.
Improved Retractor for Hemilaminectomy. C. H. Shelden and R. H. Pudenz.—p. 884.
Limited Comparison of Continuous Spinal and General Ether Anesthesia. W. G. Cooper, Wilma Zumwalt and E. D. Sugarbaker.—p. 886.
Cystometry After Spinal Anesthesia. C. J. Bellis.—p. 896.
*Demonstration of Two Types of Burn Shock. M. Prinzmetal, H. C. Bergman and O. Hechter.—p. 906.
Further Studies on Role of Bacteria in Shock Due to Crushed Muscle in Dogs. S. C. Freed, H. E. Kruger and M. Prinzmetal.—p. 914.
Retention of Intravenously Infused Gelatin: Observations in Man. A. Brunschwig and S. Nichols.—p. 923.
Intestinal Obstruction: I. Protective Action of Succinylsulfathiazole Following Simple Venous Occlusion. S. J. Sarnoff and E. J. Poth.—p. 927.
Application of Succinylsulfathiazole and Phthalylsulfathiazole to Granulation Tissue: Absorption and Excretion. E. J. Poth and C. A. Ross.—p. 932.
*Method for Local Administration of Penicillin. E. C. Cutler and W. R. Sandusky.—p. 937.
Primary Carcinoma of Third Portion of Duodenum. T. A. Shallow, S. A. Eger and J. B. Carty.—p. 939.
Spontaneous Ventral Hernia: Report of Case. E. Woliver and C. M. Scott.—p. 947.
Congenital Eventration at Umbilicus. A. H. Iason.—p. 950.
Sharp Dissector for Meniscectomy. R. E. Buirge.—p. 956.

Two Types of Burn Shock.—Prinzmetal and his associates produced two types of burns. They found that rats who were mildly burned at 167 F. for ten seconds on a single hind limb developed visible edema with considerable local fluid loss but did not develop shock. Rats whose single hind limbs were severely burned at 212 F. for from two to three minutes died in shock without visible edema and exhibited insufficient local fluid loss to account for death. Similar results have been obtained when larger areas of the body were severely burned for ten seconds. The authors conclude that there are at least two mechanisms capable of producing shock: one due to local fluid loss and the other due to some unknown factor. This difference in the mechanism of production of burn shock may explain some of the differences of opinion regarding therapeutic agents in burns.

Local Administration of Penicillin.—Cutler and Sandusky have used dehydrated human plasma as a vehicle for penicillin. The sodium salt of penicillin is mixed under sterile conditions with dehydrated plasma. From 10,000 to 20,000 units of penicillin to 0.2 Gm. of plasma is a desirable proportion. The plasma tends to be lumpy, but gentle stirring reduces it to a light fluffy powder. Penicillin is added, and after gentle stirring a homogeneous mixture is obtained. Uniform distribution of this mixture is accomplished by means of a powder insufflator. When sprayed on a wound surface, the penicillin-plasma mixture immediately goes into solution and the tissues become yellow. Complete hemostasis must be attained before insufflation; otherwise the mixture will be washed off. It has been observed that 0.2 Gm. of plasma is sufficient for fine frosting of a surface 100 sq. cm. in area. This method of local penicillin therapy has demonstrated its superiority over previous methods used.

Union Médicale du Canada, Montreal

65:129-270 (Feb.) 1945

Endocrine Aspects of Calcium Metabolism. E. Robillard.—p. 132.
Anorexia in Children. N. Vezina.—p. 140.
*Gastric Cancer with Febrile Onset. A. Cantero.—p. 148.
Clinicoradiologic Syndrome of Pancoast. J. Prevost and J. Leger.—p. 152.
Bronchial Obstruction by Benign Tumor. B. G. Begin.—p. 156.

Gastric Cancer with Febrile Onset.—It is not unusual for fever to accompany a known gastric cancer, but in the 4 cases reported by Cantero fever was the first and only manifestation. The first 2 cases are examples of latent cancer in which influenza preceded the appearance of the first symptoms. In the other 2 cases progressive fever was present without discoverable cause until the cancer was quite advanced. Cases of

this type demonstrate that the early diagnosis of gastric cancer requiries considerable perspicacity. The polymorphism of gastric neoplasm with its latent form poses numerous diagnostic problems. Roentgenoscopy and gastroscopy should be employed systematically on all persons of a certain age whether or not they present characteristic signs. Three of the patients were between 50 and 54 years of age. The other patient was a woman aged 23. Latent gastric cancers are comparatively frequent. They are often quite advanced before they exhibit the slightest general sign. The appearance of fever indicates in the majority of cases an ulcerated adenocarcinoma. Infiltrating gastric cancers rarely ulcerate. The phlegmonous and edematous gastritides which appear after an infection may simulate a gastric cancer with febrile onset. Therapeutic tests and repeated roentgenologic and gastroscopic controls will determine the nature of the lesion.

Virginia Medical Monthly, Richmond

72:1-50 (Jan.) 1945

Further Investigations in Treatment of Vitiligo. B. F. Sieve.—p. 6.
Some Observations on Acute Paralysis. M. McCall and J. W. Pennock. —p. 18.
Palliative Treatment of Carcinoma of Esophagus: Report of Case. P. P. Vinson.—p. 24.
Abscess of Spleen with Diaphragmatic Perforation: Case Report. P. R. Lang and C. F. James.—p. 26.
Treatment of Peripheral Vascular Disease with Padutin (Deproteinated Pancreatic Tissue Extract Insulin Free). N. Bloom and D. Abeloff. —p. 30.
Meningococcemia: Report of 5 Cases. B. B. Jones.—p. 32.

72:51-98 (Feb.) 1945

Low Back Pain with Sciatica. H. L. Skinner.—p. 53.
Supervision of Pneumothorax Cases. R. H. Walker.—p. 61.
Hematologic Manifestations of Hypersensitive States. T. L. Squier. —p. 67.
Psychoendocrine Origin and Therapy of Recurrent Spontaneous Hemorrhage. P. Jacobson.—p. 73.
Murray-Wagner-Dingell Bill. H. R. 2861. H. C. Smith.—p. 81.

Yale Journal of Biology and Medicine, New Haven

17:427-502 (Jan.) 1945

*The Patient's Language: Investigation into Use of Medical Terms. F. C. Redlich.—p. 427.
Enzymes as Factors in Resistance to Tuberculosis: IV. Effect of Liver Enzymes on Tubercle Phosphatide. B. Gersti, R. Tennant and O. Pelzman.—p. 455.
Operative Technic for Ligation of Blood Supply to Brain in Dogs. C. W. Cashman Jr.—p. 461.
Variables in DC Measurement. H. S. Burr.—p. 465.
Epinephrine and Tissue Permeability. F. Homburger.—p. 479.
Health Services for Hospital Personnel: I. Neglected Branch of Industrial Medicine. A. J. Geiger.—p. 483.
Meaning of Normal. C. D. King.—p. 493.

The Patient's Language.—Redlich presents data obtained from 25 patients to whom 60 medical terms were presented for definition. All patients were literate, but none had had more than a high school education. The impression was gained that patients get most of their medical knowledge from observation of other patients and discussions among themselves. Twelve of the 25 patients thought they obtained some information from their physicians. Thirteen thought the information about their own disease was not adequate. Highly technical terms and medical jargon expressions were virtually unknown. A more important group were definitions of terms which gave rise to "semantic confusion." Such confusion might lead to maladjustment of the patient. A third group consisted of terms which led to a more or less outspoken fear response. Some of these terms were comparatively well known, as infection, cancer, paralysis, fit, tumor, syphilis, mental disease. Others were only vaguely known, often ill defined, as degeneration, psychopathic, moron, schizophrenia, hypnosis. Most patients could be helped considerably in their attitude by a rational discussion, with elimination of certain fears and doubts and other irrational attitudes arising from ignorance and misunderstanding of medical terms. Two thirds of the 25 patients knew too little about medical matters, their illnesses and the implications of their illnesses. A small group possibly knew "too much," but their knowledge was rather erratic, poorly integrated and often quite irrational. Both groups might be helped considerably by sensible information.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

56:219-266 (Nov.-Dec.) 1944

Phenol-Camphor Treatment of Dermatophytosis. B. Phillips.—p. 219.
Angiokeratoma. E. L. Cohen.—p. 228.

British Medical Journal, London

2:843-876 (Dec. 30) 1944

*Etiology of Erythema Nodosum. C. B. Perry.—p. 843.
Studies on Hepatic Dysfunction: III. Carbon Tetrachloride Poisoning: Sulfur Metabolism. J. Beattie, P. H. Herbert, C. Wechtel and C. W. Steele.—p. 847.
Critique of Gastroscopy. N. C. Tanner.—p. 849.
*Bismuth Therapy in Jaundice During Antisyphilitic Treatment. J. R. Forbes.—p. 852.
Severe Abdominal Crush Injury: Study of Mechanics in Extreme Case. D. H. Lees.—p. 853.

Etiology of Erythema Nodosum.—In view of the diversity of conditions which apparently may cause erythema nodosum, Perry studied a series of cases in an attempt to determine the causation in each. Of 112 persons examined, 38 were males and 74 females. This confirms the well known preponderance of females. The patients were tuberculin tested by the Mantoux reaction. Sixty-one gave a strongly positive Mantoux reaction and 51 a negative reaction to 0.01 mg. of tuberculin. Evaluating the patients with the positive Mantoux reaction, the author suggests that 32 were certainly tuberculous and 28 were probably tuberculous. The 51 with the negative Mantoux reaction he regards as definitely not tuberculous. Analyzing the patients with regard to age groups, the author states that in those under the age of 15 tuberculosis was definite or probable in 72 per cent, whereas in those over 15 tuberculosis was definite or probable in only 23 per cent. The material reviewed offers little support to the theory that erythema nodosum is a manifestation of acute rheumatism. The author agrees with those who have held that erythema nodosum must be regarded as the result of a nonspecific reaction to a variety of infections or toxic agents and that it is not a specific disease. However, it is clear that these agents can and do give rise to the syndrome only in patients constitutionally predisposed. The frequency with which other members of the family suffer from erythema nodosum probably offers the clue to this part of the problem and shows that the diathesis is partly inherited. The sex difference in the postpuberal incidence of the eruption suggests that endocrine factors also contribute to this predisposition.

Bismuth Therapy in Jaundice During Antisyphilitic Treatment.—Until the question of etiology is settled, the further question of whether or not to continue antisyphilitic therapy during jaundice cannot be satisfactorily answered. One method of approaching the problem seemed to be to determine whether the continuance of bismuth injections materially delayed recovery of hepatic function in cases of therapy jaundice. Forbes in the present experiment compared two groups of patients. One group received intramuscular injections of bismuth preparations, the other did not. Arsenotherapy was not given to either group while jaundiced. Care was taken that in all other respects the groups were strictly comparable. The Quick hippuric acid excretion test was employed in order to determine the recovery of liver function in the two groups of patients. The result of the experiment strongly suggests that bismuth does not significantly retard recovery of liver function in such patients. Such a result supports the view that bismuth therapy should be continued in the presence of jaundice of this nature.

Journal of Mental Science, London

90:835-946 (Oct.) 1944

Crime, Senescence and Senility. W. Norwood.—p. 835.
Types of Personality: Factorial Study of 700 Neurotics. H. J. Eysenck.—p. 851.
Neuroses in Native African Troops. L. A. Nichols.—p. 862.
Neurotic Dyspeptic Soldier. S. D. Mitchell and C. S. Mullin.—p. 869.
Death from Electrical Convulsion Therapy. F. J. Napier.—p. 875.

Lancet, London

2:841-868 (Dec. 30) 1944

Epidemiology of Peptic Ulcer: Vital Statistics. J. N. Morris and R. M. Titmuss.—p. 841.
*Treatment of Early Syphilis with Penicillin. A. O. F. Ross, Rachel B. Nelson, E. M. Lourie and H. O. J. Collier.—p. 845.
Octyl Nitrite in Achalasia of Cardia. C. Elaine Field.—p. 848.
Fracture of Odontoid Process: Method of Fixation. E. H. T. Hambly.—p. 851.
Typhoid Septicemia: Report of Case. J. F. Goodall.—p. 851.

Penicillin in Early Syphilis.—Ross and his associates treated with penicillin patients with early secondary syphilitic lesions. This paper records preliminary results in the first 5 of these cases. The treatment courses were as follows: (*a*) 30,000 units intramuscularly every three hours for eighty injections (i. e., 2,400,000 units in ten days) or (*b*) 30,000 units intramuscularly every hour for forty injections (i. e., 1,200,000 units in forty hours). The immediate response in all cases was excellent. Spirochetes and lesions disappeared at least as rapidly as is usual under adequate treatment with arsenicals and bismuth. Judged by the later effects it is doubtful whether the penicillin was as beneficial as arsenicals and bismuth might have been. (*a*) Of the 4 patients receiving 2,400,000 units in ten days, only 1 was an unequivocal success in an observation period of nine months. Another was probably but not certainly cured. The verdict remains open on the remaining 2, since the blood Wassermann reaction in 1 became negative very tardily and is still not consistently negative nine months after treatment, while there was a serologic relapse in the other some three and one-half months after treatment. (*b*) Of the 2 patients (these include the patient referred to as probably cured, treated again on becoming reinfected) receiving 1,200,000 units in forty hours, 1 is still free from evidence of syphilis four and one-half months after treatment, but the other relapsed in about two months. The freedom of penicillin from toxic properties will enable trials to be undertaken at even higher dosage levels and with longer courses of treatment. Penicillin treatment for syphilis will not become suitable for routine civilian practice until frequently repeated injections day and night can be avoided.

1:1-38 (Jan. 6) 1945

Transfusion in Peace and War. L. Whitby.—p. 1.
*Brachial Pain from Herniation of Cervical Intervertebral Disk. F. A. Elliott and M. Kremer.—p. 4.
Cavernous Sinus Thrombosis Treated with Penicillin. D. F. Johnstone.—p. 9.
Cavernous Sinus Thrombosis Treated with Heparin and Sulfathiazole. S. Muntarbhorn.—p. 10.
Abdominal Topography: Clinical Aspects. F. R. Brown and G. Smith.—p. 10.
Meningococcal-Adrenal Syndrome: Five Cases with One Recovery. J. MacD. Holmes and J. MacF. Cowan.—p. 13.
Ureteric Calculus Treated by Reversed Catheterization. R. C. Percival.—p. 15.

Pain from Herniation of Cervical Intervertebral Disk.—Elliott and Kremer point out that in the cervical region the spinal cord is large and fills the canal completely. Protrusion of an intervertebral disk may, if centrally placed, produce cord compression. Ruptures of the disk which do not produce cord symptoms are laterally placed and therefore project into the intervertebral foramen, where quite small protrusions can produce pressure on nerve roots. This result of laterally placed herniations in the cervical region has only recently been recognized. The authors give the histories of 8 patients with brachial pain. There was a uniform distribution of pain in the posterior aspect of the shoulder and upper arm and the radial border of the forearm and sometimes in the upper pectoral region. There were paresthesias in the thumb, index and middle fingers. In some cases there was a history of acute stiff neck. The signs included limitation of movement of the neck, pain produced in the arm by movements of the neck and by downward pressure on the head, and tenderness, weakness and wasting of the upper fibers of the pectoralis major, triceps and extensors of the wrist and fingers. The triceps jerk was reduced or absent, and there was usually hypoalgesia of the thumb and index finger. The clinical picture was that of a lesion of the seventh cervical root. Contrast myelography in 3 cases showed a filling defect opposite the sixth intervertebral disk involving the seventh cervical root on the affected side. The clinical and radiologic evidence suggested that the brachial pain was caused by a herniation of the sixth cervical intervertebral disk.

Transactions Royal Soc. Trop. Med. and Hyg., London

38:167-236 (Dec.) 1944

Spray Killing of Mosquitoes in Houses: Contribution to Malaria Control on Gold Coast. L. G. Eddey.—p. 167.
Pyrethrum as Tsetse Fly Repellent: Human Experiments. J. R. Holden and G. M. Findlay.—p. 199.
Rough Notes: Anopheles Mosquitoes and Malaria in Arabia. P. A. Buxton.—p. 205.
Observations on Anopheles Gambiae and Other Mosquitoes at Wadi Halfa. D. J. Lewis.—p. 215.
Yellow Fever in Recently Inoculated. M. Elliott.—p. 231.

Revista de la Asoc. Méd. Argentina, Buenos Aires

58:965-1038 (Nov. 15) 1945. **Partial Index**

*Inhibitory Action of a Strain of Staphylococcus on Cultures of Tubercle Bacilli. A. R. Arena.—p. 1026.

Action of Staphylococcus on Cultures of Tubercle Bacillus.—Arena found that a strain of staphylococcus isolated from the mucopurulent secretion in nontuberculous disease of the respiratory tract prevents the growth of tubercle bacilli in culture. Staphylococci were planted within a few hours and also within two or three days into the center of a culture of tubercle bacilli. The growth of tubercle bacilli was arrested in the area of staphylococcus inoculation. This was not a property of other strains of staphylococci.

Zeitschrift f. d. ges. Neurol. u. Psychiatrie, Berlin

175:325-484 (March 10) 1943. **Partial Index**

Myelitis Necroticans and Pathogenesis of Ulceration of the Stomach. O. Gagel and E. Reiner.—p. 333.
*Neostigmine in Amyosthenic Diseases and Mechanism of Its Effect: Problem of Fibrillar Muscular Contractions. E. Pichler.—p. 358.
Oligodendrogliomas of Multicentric Origin. W. Köhlmeier.—p. 385.
Neuritis After Typhus. J. Grubmüller.—p. 403.
Structure of Psychosis. H. Schultz-Hencke.—p. 409.
Menign Cerebral Melanomas. K. Urbanek.—p. 459.

Neostigmine in Amyosthenic Diseases.—Neostigmine in doses of 0.5 to 1 mg., occasionally combined with 0.00025 or 0.0005 Gm. of atropine, was administered by subcutaneous or intramuscular route half an hour before the noon meal in 17 cases of disturbances of deglutition of central nervous origin. Deglutition was restored to normal or was much improved. Administration of the drug must be repeated every four to six hours, since its effect is only temporary. This effect on deglutition, although not regularly obtainable, was important in preventing aspiration of food into the air passages in bulbar syndrome. The drug acts almost electively on the muscles of deglutition. It is not as pronounced here as in myasthenia. The effect obtained in 2 of Pichler's cases suggests that neostigmine cannot be utilized for differential diagnosis of myasthenic disorders from amyosthenic disorders of deglutition. The effect of neostigmine on pareses and paralyses of various types was studied in an additional series of cases. Improvement in motor power occurred temporarily only in diseases of the motor system, but the effect of the drug never approached that seen in myasthenia. The effect of the drug on pareses was either weak or absent. The denervated muscle is hypersensitive to acetylcholine and the acetylcholine content of a degenerating nerve is reduced slowly. Under these conditions the effect of the change in the acetylcholine-esterase balance on the degenerating neuromuscular elements caused by neostigmine is pronounced. Chronaximetric studies of the effect of neostigmine on 3 normal persons, on a patient with evulsion of the brachial plexus and on frog's muscles revealed a decided lowering of the rheobase (stimulus threshold). Spontaneous fibrillary and fascicular contractions in systemic diseases of the anterior horn cells may be increased by the administration of neostigmine. Irregular muscular contractions in healthy persons may be produced occasionally by the administration of larger doses of neostigmine. Contractions of this type after the administration of neostigmine were not observed in cases of total peripheral paralysis. The fibrillary muscular contractions in systemic diseases of the anterior horn cells are manifestations of the disturbed synchronizing activity of the anterior horn cells. A certain synchronization results from the administration of neostigmine in the last mentioned diseases. It is suggested that neostigmine in addition to its chief effect on the terminal plates exerts an effect on the synapses of the spinal cord.

Book Notices

Women and Men. By Amram Scheinfeld. Cloth. Price, $3.50. Pp. 453, with illustrations by the author. New York: Harcourt, Brace & Company, 1944.

This is an intensely interesting and extremely valuable book. It seems to establish conclusively the fact that the male sex is the weaker, no matter how one approaches the subject. Prenatally the rate of miscarriages is higher for boy babies than for girl babies. Throughout life the male death rate is higher. Women exhibit evidences of fortitude greater than that of the male. Entirely aside, however, from this controversial conclusion, the book is full of well documented scientific facts indicating the numerous detailed ways in which women differ from men, entirely aside from the question of environment and training. The author holds in general that environment and training tend to emphasize, rather than create, the differences between the sexes, particularly with respect to temperamental traits, aptitudes, strength, endurance and other qualities ordinarily regarded as nonsexual. The author has some interesting views relating to the marriage of tomorrow, which, whether one agrees or not, are worth reading. One of the most important features of the book is its extensive bibliography. It is also intensively indexed. Like the same author's "You and Heredity," it is a book worth having in the library of any home or school where there is an interest in science. It should also be interesting and valuable reading for physicians, especially to those who deal to any extent with emotional and personal problems and with the relations between the sexes.

The Influence of Parental Attitudes and Social Environment on the Personality Development of the Adolescent Blind. By Vita Stein Sommers, Ph.D. Cloth. Price, $2. Pp. 124. New York: American Foundation for the Blind, Inc., 1944.

This interesting book was presented in order to study the factors conditioning the behavior and personality of the adolescent blind. The blind children studied, 143 in all, were carefully selected so as to include only those totally or practically blind, those either born blind or who became blind before the age of 6, of normal or superior intelligence, with 1 or more seeing siblings, and 14 to 21 years of age. They were given the California Personality Test, and special questionnaires were answered by them and their parents. In addition, complete case studies were done on 50 of these children and their families. Results were evaluated numerically by several different "judges" and were analyzed statistically. The personality test showed that blind adolescents as a group fall below the norms of the seeing with respect to personal and social adjustment. However, it was felt that the adjustments of the blind could not be adequately measured and compared with those of the seeing by such a test. The special questionnaires revealed that blind persons do not exhibit the same type of behavior reactions; on the contrary, they develop a wide variety of attitudes and feelings as a natural outgrowth of a social environment which rarely gives them the understanding essential for development of a wholesome personality. Also this study suggests that frustrations or maladjustments result more frequently from the social attitudes and conditions surrounding the blind person and brought about by the presence of the handicap than from the sensory disability itself. Most of the parents studied experienced frustrations or feelings of conflict because of having a blind child, and the child's personality was conditioned more by his parents' attitudes and practices than by the lack of sight. The final conclusion was that a definite relationship exists between the blind child's behavior and adjustment and the parental environmental and attitudes to which the child has been exposed in early life. The physical defect does not seem to be the primary cause of personality maladjustment or even neurotic or psychotic behavior; these behavior patterns could be attributed either to insecurity and instability in the home or to extreme overprotection or overt rejection. This study clearly indicates that the feelings which the individual has with regard to his own inferiority, incompetence, uncertainty and the realization of his physical defect seem to be conditioned principally by the attitude of those around him, especially his parents.

Practical Anæsthetics for Students, Hospital Residents and Practitioners. By J. Ross Mackenzie, M.D., D.A., Senior Anæsthetist, Royal Infirmary, Aberdeen. With a foreword by W. C. Wilson, M.B., Ch.B., F.R.C.S.E., Regius Professor of Surgery, University of Aberdeen. Cloth. Price, $3. Pp. 136, with 63 illustrations. Baltimore: William Wood & Company, 1944.

The long experience of the author eminently qualifies him for the task of producing a small "guide to the practitioner or the occasional anesthetist," and his book is a valuable contribution. Within its covers a great deal of useful information is compressed into a few pages, which make interesting reading to the specialist in anesthesia as well as to the readers to whom it is specifically addressed. In every such work the author must occasionally state his own views even if these will rouse some disagreement between experts. For instance, many anesthetists would disagree with him on the desirability of using carbon dioxide during induction and in the treatment of overdose of depressant drugs or asphyxia neonatorum; and others will feel that hypercarbia is a greater danger during anesthesia than hypocarbia. The definition of "vital capacity" on page 14 suggests that it is usually measured by inspiration. The author does not seem to distinguish between "artificial" and "controlled" respiration, and he apparently believes in passing a laryngoscope with the right hand and then "changing hands" to pass the tube. His description of the signs of anesthesia could be made more complete with advantage to the beginner; for instance, no mention is made of intercostal paralysis as a valuable sign. A curious omission is that there is no mention of the importance of endotracheal anesthesia in cerebral interventions. Moreover, no details are given as to how a catheter for oxygen therapy should be placed in the oropharynx or of how a needle should be inserted into the caudal canal. The author evidently feels that trichlorethylene is a safer agent than chloroform, and he advocates the use of a concentrated solution of nupercaine for low spinal blocks. To this reviewer the chapters on "the choice of anesthetic agent" and on "anesthetics today and tomorrow" made a special appeal, as did the inclusion of the last page entitled "medicolegal notes." The chapter on anesthesia in children is the outcome of many years of specialized experience and can be read with pleasure and profit by the expert as well as the novice.

Manual of Clinical Mycology. Prepared Under the Auspices of the Division of Medical Sciences of the National Research Council. By Norman F. Conant, Ph.D., Assistant Professor of Bacteriology, Duke University School of Medicine, and Mycologist to Duke Hospital, Durham, North Carolina, and others. [Military Medical Manual.] Cloth. Price, $3.50. Pp. 348, with 149 illustrations. Philadelphia & London: W. B. Saunders Company, 1944.

This is the second of the series of Military Medical Manuals prepared under the auspices of the Division of Medical Sciences of the National Research Council. Like its predecessor it possesses a handy format, sturdy pliable cover and excellent typography and is nicely endowed with splendid illustrations.

The purpose of the manual is to sketch the fundamentals of the science of mycology, as well as the clinical and laboratory findings, diagnosis, prognosis and treatment of the majority of fungous infections affecting man. This ambitious purpose is remarkably well fulfilled. There are also the valuable features of eleven world maps giving the geographic distribution of various fungous infections and a short chapter depicting and describing "fungus contaminants to which pathogenicity sometimes is erroneously attributed."

Because of the wide scope of this small book, the superficial fungous infections of the skin commonly encountered in this country could obviously be allotted relatively little space. Thus only about fifteen pages of text have been devoted to the "Symptomatology, Prognosis and Treatment of the Dermatomycoses." It is quite apparent that the author's principal objective was to give 'thumbnail' sketches of the known human fungous diseases rather than complete details on the common fungous infections of the feet, groins and scalp. In this way the present manual forms a logical addition to available dermatologic textbooks, which omit the visceral and systemic mycoses and generally skim over the rare and exotic forms but include more detailed information on the practical measures for prevention, recognition and management of the common fungous infections of the skin and hair.

A physician who anywhere in the world encounters a disease of suspected fungous origin in any organ or system will find in the present small handy book sufficient information to help him confirm or refute his suspicions and to aid him in his management.

Foster Home Care for Mental Patients. By Hester B. Crutcher, Director of Social Work, State of New York, Department of Mental Hygiene. Cloth. Price, $2. Pp. 199. New York: Commonwealth Fund, 1944.

This is an exceptionally interesting and valuable report on a method of caring for mentally ill patients outside of institutions. These patients, carefully selected, are placed in foster homes, preferably in a small town or a rural environment. The method is valuable in some types of cases as a therapeutic procedure. Many of these patients have improved considerably when placed in family care. They have responded in a highly satisfactory manner to the home environment and to the personal relationships which have been built up. Aside from the therapeutic values, this method helps to release crowding in institutions and costs less than hospital care, even when the cost of careful supervision is added.

Patients regarded as suitable for family care fall into the following classes, according to the report:

1. Those completely absorbed with their own psychotic ideas; comfortable anywhere. This includes many dementia precox patients.
2. Senile, degenerative patients, irritable and difficult, who respond to individual attention and kindness.
3. Those whose dissatisfactions with hospital treatment decrease with family care.
4. Those unable to adjust outside the hospital.
5. Those with paranoid trends impossible to adjust among former associates.
6. Those whose recovery will be hastened by family care as a result of having emotional needs met and security somewhat restored by family care.

The book is in nine chapters, of which the first outlines the method of family care, its meaning and its values; succeeding chapters discuss administration and results of family care, family care as a therapeutic procedure, the selection of patients, the selection of homes, the supervision of the patient and the methods of organizing family care, namely the colony plan, in which patients are grouped, and the district plan, in which they are scattered. A large number of case histories makes up the lengthy eighth chapter, which covers fifty pages. The ninth chapter gives suggested record forms and procedures and is followed by an appendix listing family care programs in the United States; such programs exist in California, Illinois, Maryland, Massachusetts, Michigan, Nebraska, New York, Pennsylvania and Rhode Island. Prospective programs are under development or consideration in Connecticut, Minnesota and Utah.

This is a valuable report, well prepared and documented.

Technical Methods for the Technician. By Anson Lee Brown, A.B., M.D., Director of Dr. Brown's Clinical Laboratory and Dr. Brown's School for Technicians, Columbus, Ohio. Third edition. Fabrikoid. Price, $10. Pp. 706, with 229 illustrations. Columbus: The Author, 1944.

This book originally started with a few directions for medical students and doctor's assistants who were called on to perform urinalysis and blood counts. It was found that the brief manner of presentation of the methods was quite convenient. The present edition is an outgrowth of an abundance of new material and new experiences which have accumulated since the appearance of the second edition. The entire style of the book embodies brevity. The directions are outlined and concise. The book should be useful to technicians who wish to brush up on the various standard methods of laboratory procedure. On pages 673 to 675 is given a list of one hundred and five laboratory reference books. The index is quite clear. The illustrations are simple and somewhat schematic. At the end of each chapter are assembled questions covering the preceding text.

Cosmetology in the Negro: A Guide to Its Problems. By Gerald A. Spencer, M.D. Cloth. Price, $2.50. Pp. 127, with 35 illustrations. New York: The Author, 1944.

The author had an intriguing idea, and his well written preface and introduction gave promise of an unusual book, but he failed in his assignment largely through negligence. Errors in spelling, that are obviously printer's errors, appear all too frequently for so small a book, and the discussions of the various diseases are much too sketchy and not always accurate. There are the surprising statements that vitiligo, if not treated early, extends to the hands and other parts of the body and that disturbances in the baby's diet may cause the hair to drop out. Listed among the common systemic conditions observed to affect the hands are the rarely encountered tuberculosis, vitamin deficiencies and glandular disturbances; and wart, or verruca, is defined as a term used to cover a group of diseases of the skin. The illustrations in black and white, though numerous, are not all clear and, though the book contains much useful information, all in all there is little about it to merit recommendation.

Soldier to Civilian: Problems of Readjustment. By George K. Pratt, M.D., Psychiatric Examiner, U. S. Armed Forces, Induction Center, New Haven, Connecticut. Foreword by George S. Stevenson, M.D., Medical Director, The National Committee for Mental Hygiene. Cloth. Price, $2.50. Pp. 233. New York & London: Whittlesey House, McGraw-Hill Book Company, Inc., 1944.

Current interest in the problems of reconversion from war to peace is given sound directional guidance by the recent availability of books on the subject, such as "Soldier to Civilian." Admittedly a discussion of one of the many phases of the returning veteran, this is an exceptionally carefully reasoned and scientifically accurate approach to the subject. From previous experience in psychiatric work and a review of a few of the problems that confront the discharged service man and woman the author focuses attention on the main conflicts that are likely to arise with demobilization. In an orderly fashion the whole effect of the war on the average soldier is discussed. A brief summary of the mental equipment the average citizen took with him to induction is given at the beginning of the book. The effect of the military services is described next.

The second half of the book is devoted to the readjustments to civilian life after discharge from the armed forces. Proper stress is given to the importance of the initial week at home after discharge. Many helpful suggestions are given for the easier transition from military life to civilian industry. Getting reacquainted with the family is deftly treated. While there are brief case reports, it is regrettable that more are not included. This is an excellent handbook for the average physician, and it will give him a better insight into the problems of the future.

Introduction to Parasitology with Special Reference to the Parasites of Man. By Asa C. Chandler, M.S., Ph.D., Professor of Biology, Rice Institute, Houston, Texas. Seventh edition. Cloth. Price, $5. Pp. 716, with 309 illustrations. New York: John Wiley & Sons, Inc.; London: Chapman & Hall, Ltd., 1944.

As in the previous edition, this book presents in a readable form a comprehensive account of the wide field of parasitology, with particular reference to the protozoan, helminth and arthropod parasites of medical importance. The biologic aspects of the parasites of man, such as life cycle, epidemiology, pathogenicity and prevention of infection, are stressed. Detail on morphology and taxonomy is restricted to a minimum. Many of the advances in parasitology which have occurred during the last four years are incorporated in this edition. Because of the interesting style in which the book is written, it offers a pleasant, as well as reliable, introduction to a knowledge of parasites and insect vectors of disease, essential for an understanding of parasitic and insect borne infections. The book should continue to receive the wide acceptance as a textbook for collegiate instruction in the subject which its predecessors enjoyed.

The Practice of Medicine. By Jonathan Campbell Meakins, M.D., LL.D., Brigadier, Deputy Director General of Medical Services, Royal Canadian Army Medical Corps. Fourth edition. Cloth. Price, $10. Pp. 1,444, with 517 illustrations. St. Louis: C. V. Mosby Company, 1944.

This is one of the standard, excellent textbooks of medicine, considerably revised not only by extensive clarification of many subjects but also by the inclusion of new portions which are timely. Among the latter are chemotherapy, including penicillin, and certain wartime pathologic states, such as crush syndrome and blast injuries. Moreover, new stress has been laid on the importance of preventive medicine and some recent concepts of psychosomatic aspects of medicine. Altogether the book is well arranged, well written and easy to read.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

COMBINED IMMUNIZATION AGAINST WHOOPING COUGH AND DIPHTHERIA

To the Editor:—**I wish to have an opinion on the combined method of immunization against diphtheria and whooping cough. Is it as effective as separate immunizations? If so, what is the best preparation to use and by whom is it made?**

S. L. Burdeshaw, M.D., Headlands, Ala.

ANSWER.—In a Report of the Council on Pharmacy and Chemistry (THE JOURNAL, Sept. 30, 1944, p. 294) Felton and Willard state that "the combination of pertussis vaccine with diphtheria toxoid and/or tetanus toxoid has been suggested by a number of workers. This would be a convenient means of reducing the number of routine immunization injections generally recommended for infants and children. . . . Sauer and Tucker obtained development of complement fixing antibodies in response to mixed Hemophilus pertussis vaccine and diphtheria toxoid in three doses at three week intervals equal to that obtained with H. pertussis vaccine alone. Daughtry-Denmark obtained like results with three doses at one week intervals. . . ."

In a five year report "Immunity Responses to Mixtures of Diphtheria Toxoid and Pertussis Vaccine" Sauer, Tucker and Markley (THE JOURNAL, Aug. 5, 1944, p. 949) concluded that "infants can be immunized successfully against the two diseases at the same time." These investigators, Daughtry-Denmark (*Am. J. Dis. Child.* **63**:453 [March] 1942) and Kendrick (*Am. J. Pub. Health* **32**:615 [June] 1942) used different methods to prove conferred active immunity. All found that alum precipitated mixtures yielded the best results. Alum abscess has been virtually eliminated by deeper subcutaneous injections, lateral and distal to the deltoid muscle, with the needle pointed distally and the site of injection promptly massaged by several firm distal strokes. To prevent abscess, Sako, Treuting, Witt and Nichamin (THE JOURNAL, Feb. 17, 1944, p. 379) recently advised that the needle for alum precipitate injections be dry.

Northwestern University Medical School has granted rights to Parke, Davis & Company to prepare Combined Diphtheria Toxoid, Alum Precipitated, and Pertussis Vaccine (Sauer). The bacilli are grown on Bordet-Gengou medium made with human blood. In a similar product of Eli Lilly & Co. the bacilli are grown on Bordet-Gengou medium made with bovine blood and are "washed" before they are alum precipitated with diphtheria toxoid. There are also several other brands of combined pertussis-diphtheria antigens.

CONGENITAL ABSENCE OF GALLBLADDER AND BILE DUCTS

To the Editor:—**A baby aged 4 months has been jaundiced since the fifth day after birth. A diagnosis of hemolytic anemia was made. Injections of crude liver and a liver-stomach concentrate with iron and vitamin B were administered, resulting in a definite increase in hemoglobin and red cells, yet the jaundice persisted. The infant was then hospitalized for observation; the consensus was obstructive jaundice. An exploratory operation was undertaken, and it was discovered that the child had no gallbladder and no hepatic duct. The infant has recovered from the operation and the general condition is good. During all this time the infant has gained weight and has been as active and alert as any child that age. The urine is a deep yellow or golden; the stools have always been yellowish; bile has shown up in the stools since the jaundice was first noticed. What is the prognosis in this case?**

Siegfried Baruch, M.D., Brooklyn.

ANSWER.—If the findings as a result of the exploratory operation are correct it is apparent that the infant has a congenital absence of the gallbladder and of the extrahepatic biliary ducts. The clinical symptoms found in this patient are not unusual; the bile found in the stools is doubtless due to the diffusion of bile pigment into the intestine along with the intestinal secretions made possible by the exceptionally large amount of pigment in the circulating blood. It does not necessarily mean that there is any connection between the biliary tract and the duodenum. It is unlikely that the child will survive beyond two years. Progressive enlargement of the liver with increasing cirrhosis and ascites will probably develop. A great many varieties of congenital abnormalities in the development of the extrahepatic biliary ducts occur. In only 16 per cent of 200 cases in one series reported were the cystic and hepatic ducts patent. When the atresia involves only the distal portion of the common duct and the gallbladder is present and contains bile, the obstruction may be relieved by making an anastomosis between the gallbladder and the stomach or duodenum. A few such operations have been performed successfully and the patients have survived in good health for a number of years. The oldest patient operated on by Ladd was 13 in 1940 and had been asymptomatic since the time of operation. When the gallbladder is absent or the cystic duct not patent, but a remnant of the hepatic duct can be found, the anastomosis may be attempted but the outlook is not promising. A small catheter may be introduced into such a remnant of hepatic duct and led through the stomach or duodenum by the method described by Dragstedt and his associates. A fine T tube also could be used, but in either case it is imperative that the tube be left in place for six months to a year in an attempt to prevent subsequent stenosis.

The preoperative preparation of these patients is exceedingly important and involves the administration of adequate amounts of vitamin K together with blood transfusion. It is usually wise to wait for one or two months after birth to make certain of the diagnosis. Hicken and Crellin suggest that at operation the extrahepatic biliary system, if any is present, may be filled with saline solution under pressure or may be visualized by injecting contrast mediums into any available part of the system and subsequently taking x-ray films. They remark that occasionally low obstruction in the duct system is due to plugs of mucus, bile or cellular detritus and that this can be removed by irrigation. Disruption of the abdominal wall is a special hazard after operation on these patients, and for this reason a transverse incision in the upper abdomen is indicated. Needless to say, surgery of this type is exceedingly difficult and should be undertaken only by those experienced in the surgery of children and properly equipped with fine needles, thread and suitable instruments. Even under optimum conditions the outlook is not good.

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MECHANISM OF NORMAL AND FALSETTO VOICE SOUNDS

To the Editor:—**From a purely anatomic or physiologic point of view what is a falsetto voice? Is it produced without the vocal cords? If not, how can they, after straining to reach a top note, attain suddenly by relaxation a new and easier top range? Are different structures involved or are the same structures used by a different method? Is a node produced in the middle of the cord, thus doubling the vibration frequency? Several teachers of voice express views widely diverging.**

Theodore M. Frank, M.D., Texas City, Texas.

ANSWER.—The most authoritative information on the mechanism of the production of the normal and the falsetto voice has been obtained by direct vision of the vocal cords by means of stroboscopy and by the ultra high speed motion picture camera. Information obtained with the aid of stroboscopy is reviewed in "The Mechanism of the Larynx" by V. E. Nagus (St. Louis, C. V. Mosby Company). Motion pictures taken at 4,000 exposures per second have been made by the Bell Telephone Laboratories. Observations by both methods show that both the normal and the falsetto voice are produced by the true vocal cords, which are set into vibration by the air stream. In each case the cords vibrate throughout their whole length without the production of nodes.

The ultra high speed camera demonstrates that in the production of the normal voice the free margins of the cords approximate throughout an appreciable vertical distance. Each cord shows a wavelike motion from below upward. The crest of the wave on each side appears well below the upper margin and moves upward and outward. The crest of the wave on one side approximates or contacts the crest of that on the other side to different degrees, with variations in the pitch and character of the tone produced. As the trough of the wave reaches the upper margin of the cord the crest of the next wave appears below. As the pitch rises, the length and tension of the cords increase and the configuration changes.

The theoretical explanation given for the falsetto voice is that the lateral bundles of the thyroarytenoideus internus muscles relax, thereby relaxing the body of each cord, while tension on the free margin is maintained mainly by the opposing action of

the cricothyroideus and the cricoarytenoideus muscles. The result is a loss of elasticity, the margins become thinned, a smaller area of the margin of each cord comes in contact with its fellow during vibration, and the movement occurs more in an up and down direction than during the normal voice. This explanation seems to be supported by the ultra high speed motion picture demonstration by the Bell Telephone Laboratory.

EPISODES OF RECURRENT DEPRESSION

To the Editor:—A white woman aged 53, a housewife, first consulted me two and a half years ago. Her complaints were (1) fatigue, not the result of physical exertion, so extreme that it required "every bit of nervous energy she could master even to move" and (2) emotional instability manifest by uncontrollable crying when extremely tired. She recognized no reason for this but at times could not control the crying. At the age of 25, while teaching school, she had a similar condition for several months. Again in the middle thirties, when she was a secretary, a second attack occurred lasting about six months. A third attack, more severe and of longer duration than the others, occurred during her early forties. At that time a complete examination revealed nothing of significance except a basal metabolic rate of minus 18, for which thyroid was administered. At that time she and her husband were living in New Mexico. She has had no pregnancies. The menopause occurred at the age of 47. Her tonsils were removed years ago. Other medical and surgical history is of no import. For the last seven years she has lived in southern California. The patient is well developed and well nourished, is 5 feet 6 inches (168 cm.) tall, weighs about 145 pounds (66 Kg.), the blood pressure is 130/85 and the pulse rate is 90. Other physical examination, blood and urine are normal. Thyroid orally and estrogen by injection failed to aid, and various other medications were used, including neostigmine, amphetamine, adrenal cortex extract and salt, diethylstilbestrol, vitamin E and finally aqueous extract of whole pituitary. The first injection of the pituitary produced results, and two days later the patient appeared and acted completely normal; she exclaimed "I did more work yesterday than in all the three months previous put together." This was continued every few days, then gradually increasing the interval, and it was found that nine days was the longest period between injections before depression occurred. Thus complete relief continued until May of this year, when the treatment rapidly failed. After several weeks, about six, it was again tried, but without results. Reexamination reveals nothing; the basal metabolic rate is normal using thyroid ½ grain (0.032 Gm.). Blood and urine are normal, as is the blood nonprotein nitrogen and blood sugar. Roentgen examination of the sella is normal. M.D., California.

ANSWER.—The patient appears to have been going through episodes of recurrent depression. It would be important to know whether the good interval periods were characterized by overactivity or elation.

Careful psychiatric study is indicated to determine what psychologic or environmental stresses precipitated these attacks. However, in some such cases it is difficult to find any clearly related causative psychogenic factors.

Treatment should include psychotherapy and socialization. The patient should be safeguarded if the physician suspects that she has any intention of injuring herself. In serious depressions hospitalization is indicated. The food intake should be increased if the patient is losing weight. Occasionally small doses of amphetamine sulfate, 5 mg. twice a day, are helpful. In severe depressions electric shock treatment is indicated.

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ABSCESS OF INJURED DECIDUOUS TOOTH

To the Editor:—A boy aged 4 years broke one of his incisor teeth some time ago. Since then the tooth has developed an abscess which periodically drains through the gum. Is there any contraindication to extraction of the tooth at this age? Will the abscess be likely to affect the normal development of his second tooth? What is the best way of handling this situation? M.D., Connecticut.

ANSWER.—The only possible contraindication for extraction of the tooth is the possible effect on lip function, and this is negligible in the face of the hazard provided by harboring the focus of low grade infection. As a rule the infection does not penetrate the membrane of the crypt of the permanent incisor. Occasionally in case of extensive osteomyelitis of the jaw such infections produce hypoplasia of the permanent teeth which are forming at the time of the infection, but in these instances the severity and extent of the infection are greater than in the condition described.

While it is possible in some instances to fill the root canal of the injured deciduous tooth, thereby permitting its retention, the incidence of a continued low grade infection or reinfection in the injured area is so great that this procedure is not followed commonly. As the direction and extent of growth of the premaxillary portion of the upper jaw tend to increase the width of the alveolar process in this area and the response in alveolar bone to the eruption of the permanent teeth contributes to the same end, there is no necessity for placing a mechanical device to maintain the space of the extracted tooth, as is often necessary in lateral segments of the dental arch. The procedure of choice, unless complications not stated in this problem arise, is extraction of the deciduous tooth.

STERILIZING SPINAL PUNCTURE NEEDLES IN OIL

To the Editor:—In our hospital the spinal puncture needles are boiled and sterilized in oil. Before being used they are cleaned in a basin of sterile water by the operating room nurse. Often, as the spinal fluid is withdrawn after spinal puncture, droplets of oil are seen in the spinal fluid collected. 1. What are the advantages of sterilizing these needles in boiling oil? 2. What complications are likely to occur if some of these oil droplets are injected into the spinal canal when giving spinal anesthesia? 3. Do you think that the severe headaches and signs of meningismus are directly traceable to droplets of oil getting into the spinal canal? M.D., New York.

ANSWER.—1. The advantage of sterilizing needles in boiling oil is that a higher temperature can be attained by heating oil than by heating water, and therefore the sterilization of the needles may be more complete than when they are sterilized in the usual way, which is to place the needles in a pan with just enough water to cover them well and then to boil the water for ten or fifteen minutes.

2. Because the oil droplets that came from needles sterilized in boiling oil were considered to be undesirable, that method has been largely given up.

3. Severe headaches and signs of meningismus might possibly be associated with droplets of oil getting into the spinal fluid, depending on the kind of oil that was used, and the probabilities are that there might be a slightly higher percentage of headaches under these circumstances than when oil was not used; nevertheless there are a certain number of headaches that are usually associated with lumbar punctures under almost any circumstances.

SULAMYD AND DISEASE OF COLON AND URINARY TRACT

To the Editor:—Has the value of sulamyd (Schering) been proved in disease of the colon, kidney or urinary tract? What risk of toxicity is involved? Three children in my family have cystinuria; two have also lithiasis and kidney infection. They are unable to take mandelic acid, since they must be alkalized and may not take other sulfonamides because of the propensity to stone formation. What are the favorable and unfavorable aspects of the use of this drug for such patients?

Byron S. Bruce, M.D., Opelika, Ala.

ANSWER.—Sulamyd, or sulfacetimide, is a derivative of sulfanilamide. It differs from sulfanilamide chemically in that acetylation has been carried out at the SO_2NH_2 group. Sulamyd has been recommended especially for the treatment of bacillary infections of the urinary tract. As far as toxicity is concerned, one may anticipate essentially the same degree of toxicity as obtained with sulfanilamide. The advantages of sulamyd in the treatment of patients with lithiasis and urinary tract infections are that kidney complications rarely are associated with its use and alkalization of the urine is not essential. The disadvantage of sulamyd is that its antibacterial action against micro-organisms commonly associated with urinary tract infections is relatively less than that of sulfathiazole and sulfadiazine. Sulfacetimide has not found wide application in the treatment of diseases of the colon. It should be pointed out that, in general, the sulfonamides have been associated with disappointing clinical results in urinary infections complicated by renal lithiasis. This preparation is not accepted by the Council on Pharmacy and Chemistry.

TUBAL INSUFFLATION TECHNIC

To the Editor:—In The Journal Jan. 20, 1945 there is an inquiry from Dr. A. E. Drexel of Alexandria, Va., about using air for tubal insufflation, and there is a brief answer to the effect that it is absolutely safe. I have in the process of preparation a paper which reports two deaths as the result of such technic. These patients both died of proved air embolism. Naturally, therefore, I do not think that the advice given is correct. The pros and cons of air embolism are outlined in my paper. I feel that there are probably a considerable number of these accidents in the country which have not been reported. At best it is a haphazard way of performing tubal insufflation. Robert L. Faulkner, M.D., Cleveland.